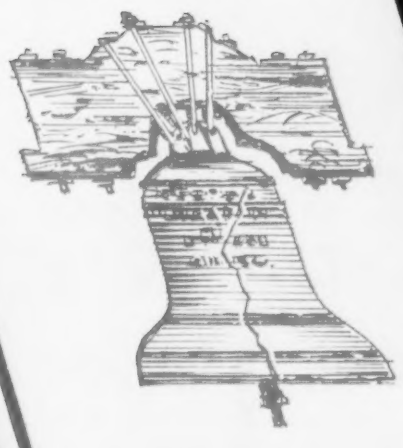
ARMY



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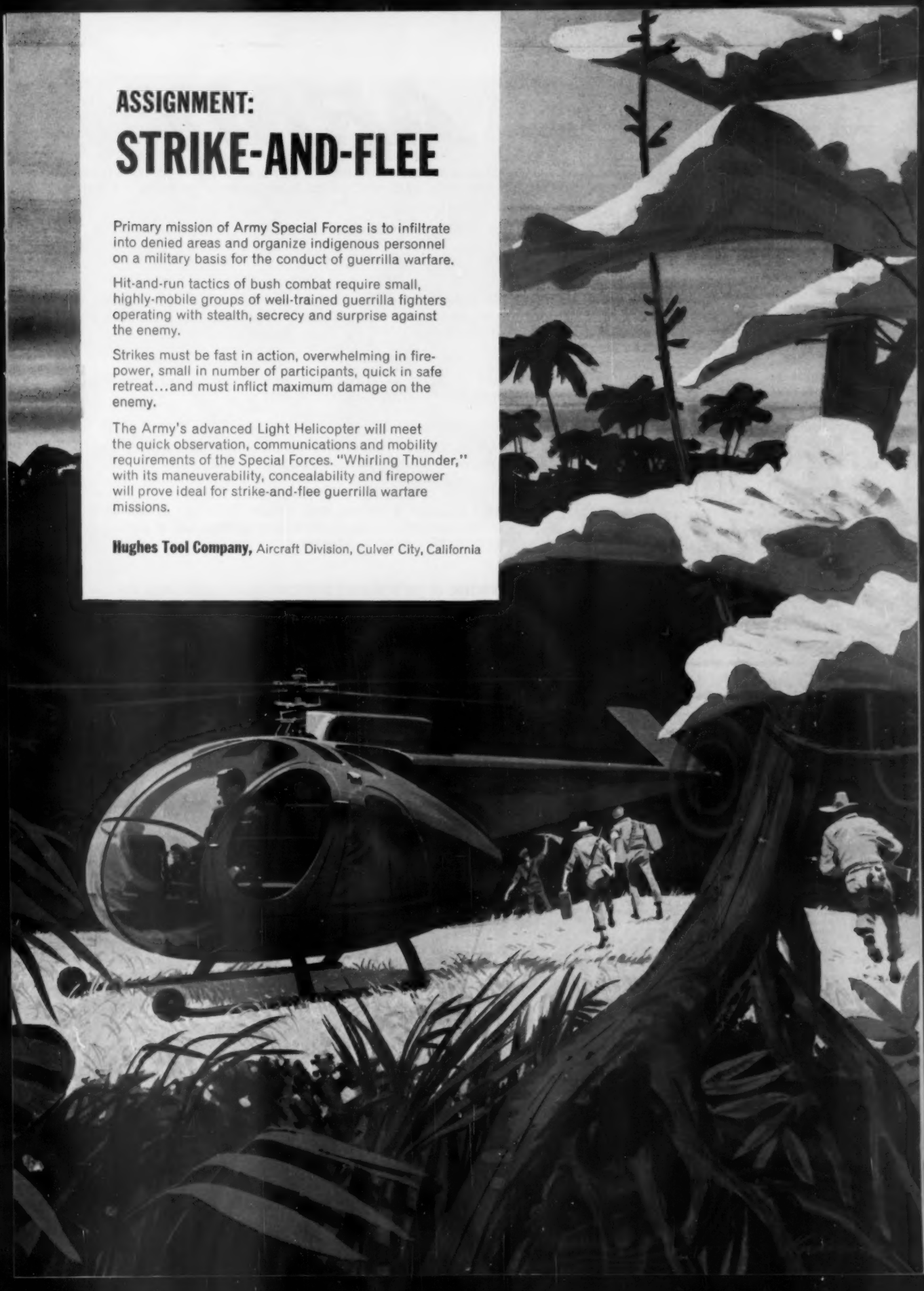

ASSIGNMENT:

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Primary mission of Army Special Forces is to infiltrate into denied areas and organize indigenous personnel on a military basis for the conduct of guerrilla warfare.

Hit-and-run tactics of bush combat require small, highly-mobile groups of well-trained guerrilla fighters operating with stealth, secrecy and surprise against the enemy.

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ARMY

A PROFESSIONAL PUBLICATION DEVOTED TO THE ADVANCEMENT OF THE MILITARY ARTS AND SCIENCES AND REPRESENTING THE INTERESTS OF THE ENTIRE U. S. ARMY

THE QUESTION OF CARS. The Combat Arms Regimental System should give the soldier a link with the past and a stake in the future. *Monte Bourjaily Jr.* 23

THE LAND BATTLE IN AN ATOMIC WAR. Some questions and a brilliant analysis. *Maj. Gen. Hamilton H. Howze* 28

PROGRAM PACKAGES. A new program in budget formulation. *Col. Chester E. Glassen and Maj. James R. Loome* 37

REAR AREA SECURITY: A JOB FOR MPS. Military police can handle what are now secondary assignments to a conglomeration of arms and services. *Maj. Keith L. Monroe* 45

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COVER. Today, as in 1776, the Minutemen of 1961 respond to the call of Liberty. *Tom Hickson*

published by the
ASSOCIATION OF THE UNITED STATES ARMY

How the ocean grew "ears" to pinpoint missile shots

A quarter of the world away from its launching pad an experimental missile nose cone splashes into the ocean.

How close has it come to the target?

Where can it be found, recovered and studied?

To answer these questions quickly and accurately, Bell Telephone scientists have developed a special system of deep-sea hydrophones—sensitive "ears" that hear underwater. Its name—the Missile Impact Locating System, or MILS for short. MILS, produced by Western Electric, manufacturing and supply unit of the Bell System, involves two types of networks.

- One is a Long Distance network which monitors millions of square miles of ocean. The nose cone releases a small bomb which sinks and explodes at optimum depth for transmission of underwater sounds. Vibrations are picked up by hydrophones stationed at optimum depth and instantly carried by cables to ground stations. Since the vibrations take longer to reach some hydrophones than others, time differences are measured to compute the location of the nose cone.
- The other is a "bull's-eye" network which monitors a restricted target area. This network is so sensitive that no bomb is needed. It can detect the mere splash of an arriving nose cone and precisely fix its location.

MILS is now operating in both the Atlantic and the Pacific test ranges. It was installed by the U. S. Navy with technical assistance from Western Electric.

It's still another example of how the universe of sound—below the sea, above the earth, in outer space—is constantly being explored by the Bell Telephone System.

BELL TELEPHONE SYSTEM

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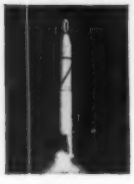
DISCOVERER SERIES Position gyros to aid vital satellite recovery programs have been developed and produced for this series by General Precision.

EXPLORER SERIES Over 20 General Precision components have assisted in the launching of these satellites.



MIDAS General Precision has developed and is now producing control moment gyros to stabilize MIDAS satellite with reference to earth when satellite is in orbit.

The major systems interpreted here are testimonials to General Precision's experience in space. The four divisions of General Precision, Inc., are represented by some system, subsystem or component on nearly every satellite, space vehicle, missile and rocket now in operation or development.

All of the corporation's facilities are consolidated for the systems management of major new space and weapons projects. Thus, the comprehensive General Precision capability is now at a new peak potential. As a result, a satellite or space vehicle program can draw upon the services of more than 16,000 General Precision employees (including 4,500 scientists, engineers and technicians) and well over 2½ million square feet of combined floor space.

This combination of talents and facilities, backed by the corporate financial resources of General Precision, Inc., makes it possible to develop, produce and manage a space system from concept to application.

GENERAL PRECISION AND SPACE

CENTAUR A 32-lb. digital computer with a displacement of less than 0.6 cubic foot has been developed and is now being produced by General Precision for this space vehicle's guidance system.

VENUS STUDY A balloon-borne optical astro-tracker developed and produced by General Precision is being used in a series of explorations to photograph Venus for the first time from outside the earth's atmosphere.

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ARMY letters

WHERE IS THE NEW GEAR?

● As a new member of AUSA I hesitate to venture my opinion on our magazine, but I do want to say I was very glad to see the Guevara articles on guerrilla warfare. I would also like to see some articles on special warfare.

I would also like to ask why the Army is spending so much money on a replacement for the jeep when the money could be better used in some other field where the need is more pressing. While possibly the old jeep was not the best, apparently it was fairly adequate. When you consider the cost of developing the M151, I think it was unwise to procure it at the expense of other equipment. Indeed, the 101st Airborne probably will be equipped with the M151 before it receives the M14 rifle. We continually read where the soldier is getting modern equipment; yet it is only on test and in general the line outfits have no new equipment. This may be good publicity for the Army, but it backfires when the taxpayer wonders why none of this materiel is issued.

GERALD A. HALBERT

Fort Campbell, Ky.

TACK ON TEACHER'S CHAIR

● Like Horace, I too, am indignant when the worthy Homer nods.

I am going to put a tack on teacher's chair. In reply to Fred D. McHugh's complaint against "verbal orders" (May), I cite his chosen authority. I quote from the Fowler-Nicholson dictionary of American-English usage:

"*Verbal* meaning of or in words, *oral* meaning of or with the mouth, & words being as much used in writing as in speaking, it is obviously foolish to say 'in words' *(verbal)* when the sense wanted is 'in spoken words' *(oral)*. All very true, but the OED [*Oxford English Dictionary*] gives as def[inition] 4 'Conveyed by speech instead of writing,' with examples from 1591 to 1877, and to insist on the distinction is now both useless and pedantic."

T. L. GUNTHORP

Cape May Point, N. J.

SAFETY ON THE RANGE

● The shiny helmet liners and neatly blocked cloth caps worn by Lt. Col. Paul V. Liles and his men ("Rapid-Fire Trainfire," May), are most distinguished in appearance. As a former Ranger in Korea, I think they would well serve for a ceremonial occasion, such as a military funeral service for someone fool enough to go firing on a rifle range without wearing his steel pot.

JOHN SEITZ

Boston, Mass.

VALUES AT USMA PREP

● As a former cadet candidate, I congratulate you on the very fine article about the USMA Prep School featured in the May issue. The wide dissemination such publicity receives is of great value to the service.

There are certain intrinsic values gained by students at USMAPS that one who has not attended cannot understand. The close companionship of the 200-odd candidates creates friendships that are lasting and close. The rich reward of watching yourself and a large group of strangers with only an ideal in common grow into a homologous group of young men with common views and similar interests is unparalleled in the civilian world.

The value of USMAPS in preparing the candidate for the Military Academy extends far beyond the mere surface value of an academic background. The high ratio of successful "Prepsters" who make good up at "Woo-Poo" is not merely an indication of the high quality of the academic department. The problem of adjusting to life such as is encountered at USMAPS yields valuable experience in the same adjustment at the Academy. The rigid schedule, the discipline, and the constant close contact with other persons that a closed society like this produces are immeasurably valuable in preparing for the Academy.

As pointed out in your article, the athletic life of the Prep School is not slack, either. The routine of physical training every day for the length of the school year develops in most physical stamina, confidence, and proficiency that will be quite useful when they reach the academies.

The social life is one which requires close association with the student body to understand. Besides the two formal dances each year, there are numerous occasions when the Prep School as a unit is invited to participate in the recreational activities of the many girls' schools in the greater Washington area. The night life of the District is a welcome diversion to the candidate on a weekend pass.

For the young man who has "Point's in His Eyes," I can recommend no finer way of going, and for those who do not enter the Academy the rewards are great as well. Once again, I thank you for the fine article about a school which I am proud to have attended.

MICHAEL J. GATES

Hampton, Va.

HONOR THE REGIMENT

● In all the criticism of the Combat Arms Regimental System, I've yet to see some positive suggestions. One reason might be that critics seek the tight and unique one-ness a unit has in combat. This one-ness is found only in a well-trained unit undergoing the stresses and strains of combat. So far our battle groups, battalions and squadrons have not and perhaps never will undergo combat under CARS. New units don't seem to meet the challenge because they are different.

Another reason might be that the

INDEX TO VOLUME 11

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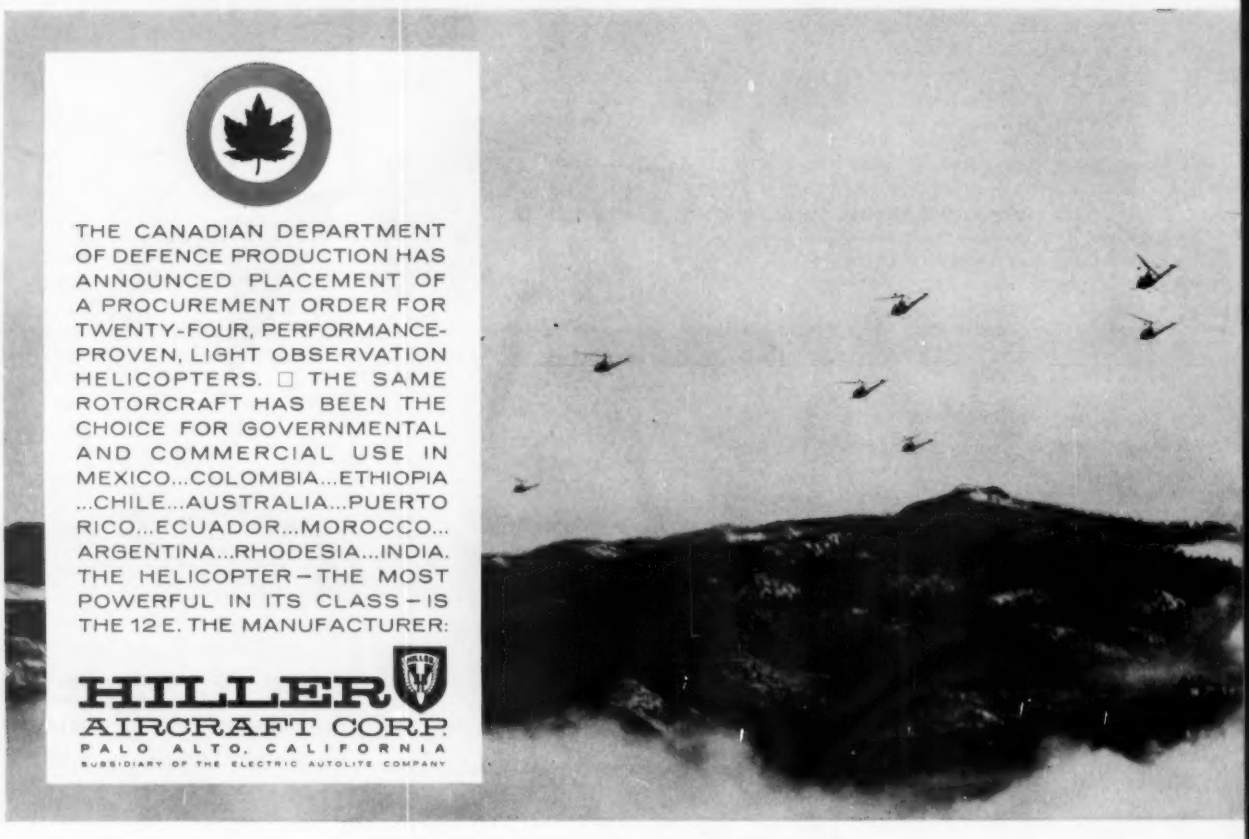
THE CANADIAN DEPARTMENT OF DEFENCE PRODUCTION HAS ANNOUNCED PLACEMENT OF A PROCUREMENT ORDER FOR TWENTY-FOUR, PERFORMANCE-PROVEN, LIGHT OBSERVATION HELICOPTERS. □ THE SAME ROTORCRAFT HAS BEEN THE CHOICE FOR GOVERNMENTAL AND COMMERCIAL USE IN MEXICO...COLOMBIA...ETHIOPIA ...CHILE...AUSTRALIA...PUERTO RICO...ECUADOR...MOROCCO... ARGENTINA...RHODESIA...INDIA. THE HELICOPTER—THE MOST POWERFUL IN ITS CLASS—IS THE 12 E. THE MANUFACTURER:
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LETTERS

various battle groups, battalions and squadrons of any one regiment haven't tried to develop the camaraderie necessary for CARS to succeed. Anyone who has brothers can remember times when competition and even animosity seemed to split us. But let an outsider try to interfere! In the same way, under CARS, the brothers-members of a regiment, even though in different battle groups, battalions or squadrons, should share their activities—competing among themselves but banding together against outsiders. This should be the nature and spirit of such a close corporation as the regiment in the One Army idea.

My final reason, which might seem contrary to the purupose of CARS, would be the desire for stability in a period of constant change. Change is in the nature of things in this world. Perhaps it would be easier if things would remain static, but think of the fun and the challenges we would miss. To meet the new problems our nation and our Army must face, we soldiers must adapt ourselves to meet our enemies as best we can. This in itself means adapting to those changes that will allow us the best in combat and the greatest strength from traditions.

So let's step forward, not only in accepting CARS, but in seeking ways to make its type of organization more meaningful to us as soldiers. In line with this, I most certainly would suggest using the correct titles in all publicity. Not long ago, in a magazine published by the Army, I saw a picture credited to the 2d Airborne Battle Group—but what regiment? A recent newspaper article referred to the "1st Battle Group of the 2d Infantry Division." CARS hasn't destroyed our regiments, nor their history or traditions, but if we are not careful we might destroy them through our own neglect. In order to prevent this let's exercise proper care and honor our regiments.

SFC CARL A. NISSEN
Berkeley, Calif.

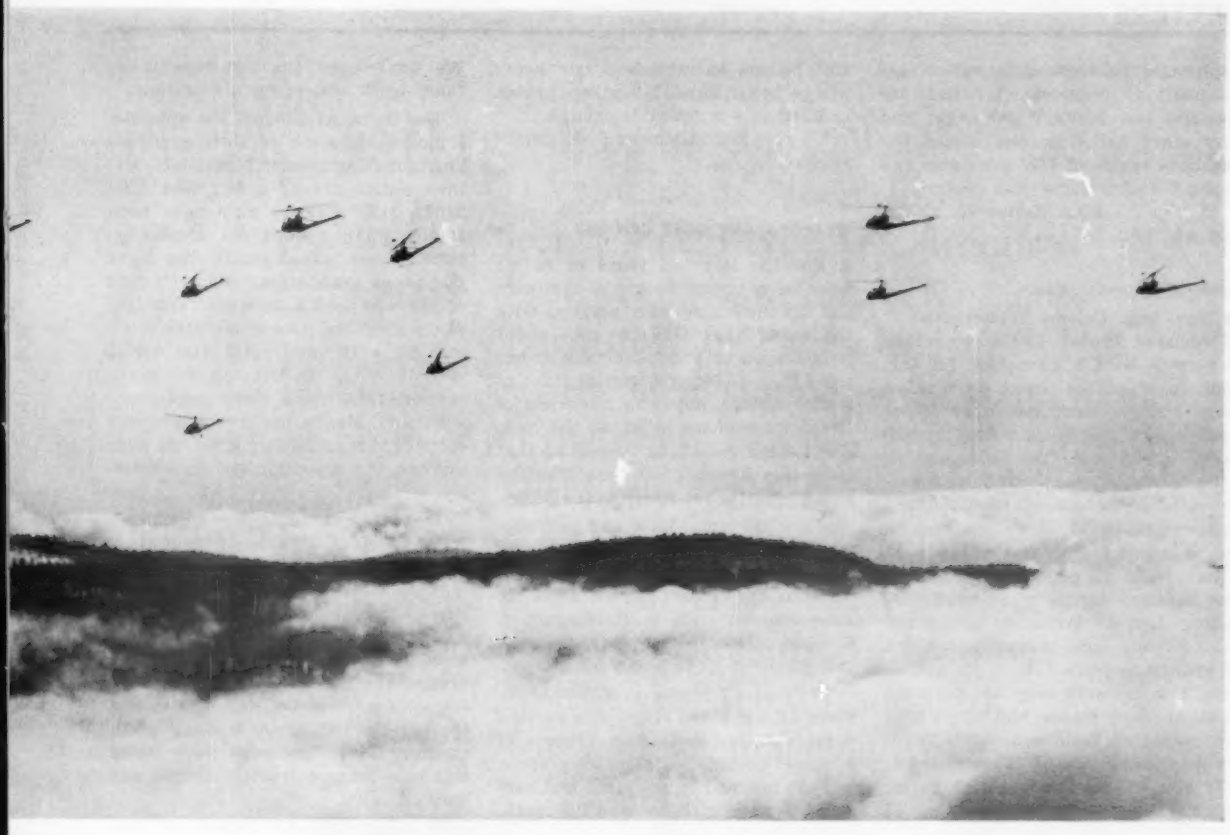
FIRE OF YOUTH

● Congratulations to Lieutenant Liell on "Goodbye, Old Soldier." I think his article contained a lot of truth; however, I do not think age and Pepsi Cola are the only criteria for thinking youthfully. In fact, quite a few gutless young soldiers deliberately "think old." This keeps them in good graces with the Old Soldiers, their efficiency ratings high, and their promotions right on schedule.

CAPT. K. S. ANDERSON
Fort Holabird, Md.

● Poor Lieutenant Liell! His difficulty ("Goodbye, Old Soldier," May 1961) may be a failure to read his commission; that is, obey your superiors and stay in front of your 600 as you gallop into the valley. Or maybe he hasn't had the word from an experienced senior who is scraping, begging, cowering, and bootlicking to make the next promotion list.

The key to an ulcer-free military career is the early recognition of the fact that you must please your boss. If you don't, your head will roll with the next efficiency report. You must constantly make him look and feel good — socially and professionally. Now this sharply reduces the number of errors you may make on your initiative, and muzzles evolutionary ideas emanating from you. Because



your rater has long ago forgotten what he read in that (invaluable if used) blue book, *The Armed Forces Officer*. And the endorser must agree with the rater.

Read your rater's mind and govern yourself accordingly. (Don't waste your time on new ideas and in expanding your responsibility.) This guarantees you a good report on Judgment Day. You did not unpleasantly upset the status quo; therefore, your realistic outlook attests your value in the future. After all, all officers up and down the line live by the same code. For example, have you ever been at a training site when your rater suggested a method of accomplishing a task? *His* rater comes along and suggests a different approach. So *your* rater agrees wholeheartedly. The process has been known to start with second lieutenants and extend to lieutenant generals, with each officer in the chain prudently licking the boot of *his* rater. Rest assured, all know which side the butter goes on.

What a future for Lieutenant Liell! Veterans of World War II will be shaping his attitudes and harping to brace up his integrity until his brain has crystallized, too. The only possible solution for straining youth is this: next time the spearhead of your zeal has been blunted, go to your headquarters and ask that disheartened, grey-headed USMA major the key to success in the peacetime Army.

In a less serious vein, there must be logic to all these directives, manuals, training programs, and the like, that flow down on hot-to-trot youth. Maybe the system has been designed to use the experience and knowledge of senior officers by having them record proved methods and supervise their application. This seems reasonable if the standard is a uniformly well-trained army. After all, it doesn't appear economical to start the Army anew with every crop of lieutenants. Every officer I know has the attitude "Don't knock the rock unless you can prove a better dance."

True, Alexander's cheeks were fuzzy when he conquered, but his campaigns don't compare with those of modern times. Present-day technology requires a warrior chief with years and years of schooling and practical experience to handle all the fire of youths with nukes in their hands: a Montgomery, a Manstein, a Bradley, a Homma, a Zhukov, and the rest.

So we, with muscles hard and minds sharp, may have a career of grinding and patient waiting.

CAPT. CHARLES J. HUBBARD
APO 29, New York, N. Y.

WHAT IS UNCONVENTIONAL WARFARE?

● Your editorial in the April issue and the comment in the May number (see Letters) indicate a misunderstanding of the term unconventional warfare (UW).

Unconventional warfare is primarily a function of intelligence, and is strategic in scope. Its operations are not confined to periods of orthodox warfare. Unlike those of conventional armed forces its operations can be expanded and contracted as desired.

Unconventional warfare includes psychological warfare, guerrilla warfare, incitement to unrest and revolt,

espionage, subversion, terrorism, assassination; economic, political, industrial and military sabotage; and any other activities and means the insidious minds of UW personnel can concoct and in some case conjure.

MAJ. JAMES W. CLARK

Bel Air, Md.

KEEPING A COOL HEAD

● Now that Colonel Walterhouse in "'Breviated Blues" (February 1961) has made such a good case for further relief of the lower extremities from summer heat and other inconveniences, I hope I can put in my two cents' worth about the other end.

I like Army Green, but I (and presumably a few others) would like a lightweight khaki or white cover on the standard frame of the cap even better when it gets to be summer The overseas cap is to be worn only during travel. While it is lighter the complete lack of ventilation and of eye shade detract from its usefulness. Sun helmets may not be worn at all at many places, and where they are permitted their wear after regular duty hours usually is restricted.

If you will be kind enough to air this now, maybe by next summer (I still believe in miracles) our heads will be better aired, hence kept cooler. In itself this is desirable enough.

MAJ. HERBERT P. ECKSTEIN

Huntsville, Ala.

WEAPONS ANY DOPE CAN USE

● For the last ten years or so we have been trying to get a new rifle and machine gun into service, with the result that we are only about 20,000 down on Fidel Castro, who has more than 40,000 FN assault rifles of NATO caliber, not to mention lots of Czech rifles in the short .30 the Reds use. Lately something turned up that looks like someone has been thinking along other lines; namely, simplicity.

Minus the usual blow and guff, pictures of the XM79 grenade launcher made the papers. It looks as though someone had crossed the old Japanese knee mortar with a Harrington & Richardson single shotgun, but at second glance it looks like a bit more.

The use of distance graduations instead of numbered rings plus various degrees, to lay shots at a distance, is a prime example of simplicity for a weapon manned by one tired and harassed trooper with no head for math. We have used the figuring-out-by-fancy-work system for a long time.

The Germans did just the opposite. I picked up some of their grenades and launching gear in Normandy, and they struck me as a fair idea. The 30mm rifle grenade may have been smaller than a good one should be, but the rest looked smart. The sight had range graduations and each type of grenade used a different cartridge, easily identified. One of our lads could pick up a German outfit and use it with little calculation, but for exact results Hans would have been stuck with ours. Maybe the several grenade cartridges would complicate the supply line, but it contributed to simplicity in use.

There is one thing we should always consider. The Reds keep their fancy stuff where the technical support is heaviest. Once they had a rifle-caliber aircraft gun, the ShKAS 7.62mm, which fired 1,800 rpm. It had a nightmarish feed that went clear around the gun. Their infantry tools were the ancient belt-fed Maxim and the pan-fed DP, easier to keep up in the field. Later weapons have borne this out, being extremely simple and very effective.

Usually someone refers to our better-educated people at about this point, but I beg to differ. I find that quite a few people fire the reasonably simple M1 rifle with rear-sight screws loose and gas-cylinder lock screws a couple of turns out. In Korea I ran across a sergeant (luckily for him, from a truck company) who said his carbine wouldn't work. After taking it apart I found it shy a piston and piston-lock nut. It would have fired, but it would have worked only by hand. A sergeant yet! What about the privates?

I have heard tales about people in both wars who arrived at the front with no clue as to where the fodder went in their cannons, but until I met a man who didn't know part of his carbine was missing, I didn't believe it. If we have weapons that that can happen to, and have people who will let it happen, isn't that enough of a case for simplicity in our stuff, especially for front-line use?

I don't know who designed the XM79 or whether it will be of much use in combat. It looks as though someone decided to put out something any stupid cuss could use. At last I have found something to match my fading eyesight and nervous trigger finger.

CWO JOHN P. CONLON

Newark, Ohio

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"it is really not cricket"

It just isn't cricket, my deah, to refer to 'Jeep' vehicles as "jeep-like," "jeepy," "jeep-type," etc. In our set, you know, one *never* "jeeps around" or "goes jeeping." The word 'Jeep' should never stand alone as a verb or noun. And the plural is never "Jeeps" but instead, "'Jeep' vehicles." Properly speaking, chaps, one *should* link 'Jeep' with the model name to designate a specific vehicle as in 'Jeep' Universal. The word 'Jeep' should *always* be capitalized—because 'Jeep' is a registered trademark for vehicles made *only* by Willys Motors!

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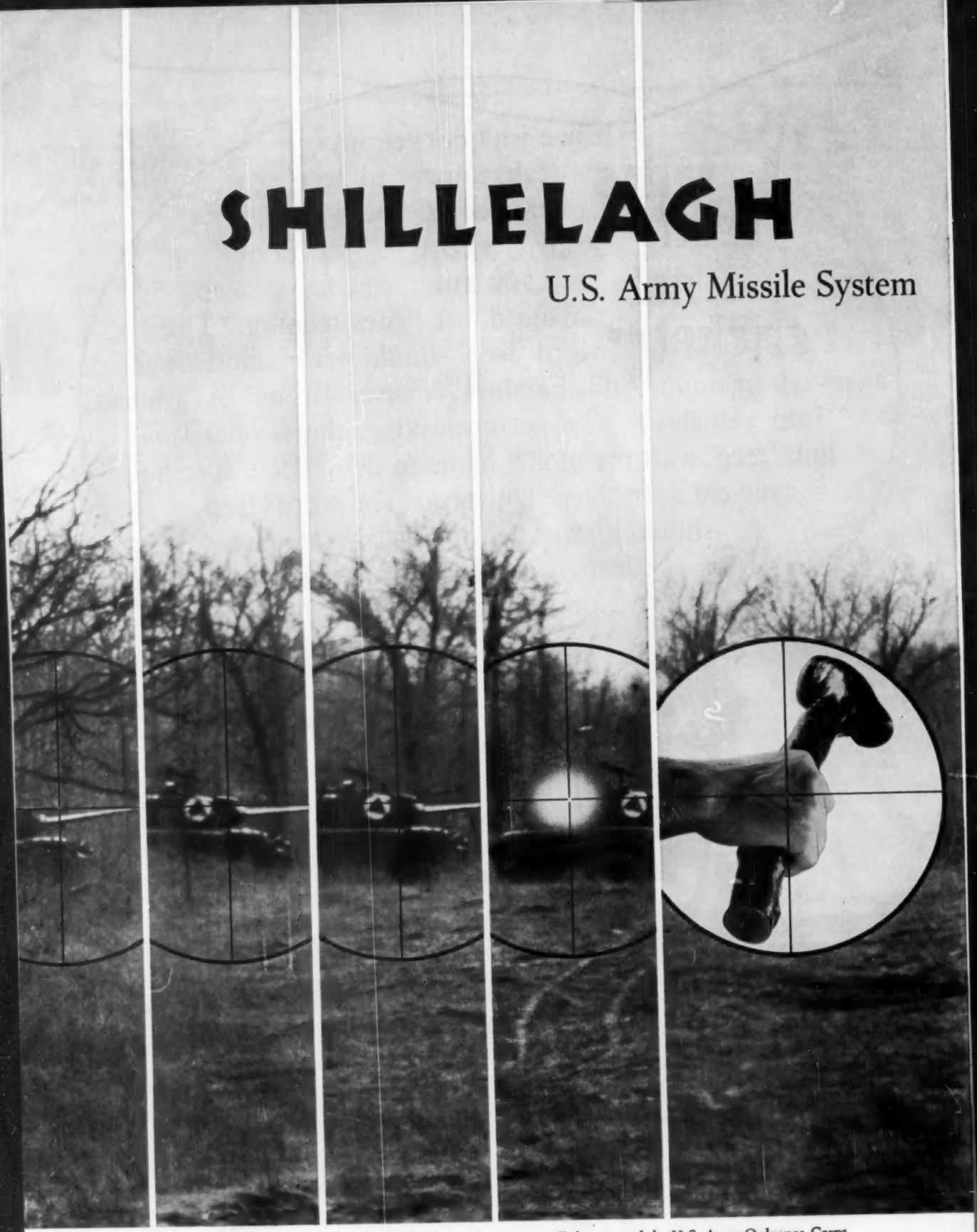
SHILLELAGH

U.S. Army Missile System



The **SHILLELAGH** is being developed for the U.S. Army under the over-all direction of the U.S. Army Ordnance Corps.

The United States Army SHILLELAGH surface-to-surface guided missile–like its Irish namesake–will be simple, reliable... lethal. Against enemy targets–moving or stationary–**SHILLELAGH**'s accuracy and firepower will provide the U.S. Army a devastating new weapon that kills with a first-round probability approaching unity ...and at ranges never achieved in antitank warfare. **SHILLELAGH** is now under development at Aeronutronic, prime contractor on this advanced weapon system.

AERONUTRONIC DIVISION *Ford Motor Company*, DEFENSE PRODUCTS GROUP
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SHILLELAGH is one of many advanced programs currently under development at Aeronutronic's new, million-square-foot Engineering & Research Center at Newport Beach in Southern California.

Write for information about Aeronutronic's capabilities and career opportunities now open for engineers and scientists.

ARMY front and center

RADICAL RESERVE PLAN

Paul R. Ignatius, Assistant Secretary of the Army (Installations & Logistics), a Californian who wears a Phi Beta Kappa key, served in the Navy during the Second World War. He is a graduate of the University of Southern California and earned a Masters at the Harvard Graduate School of Business Administration. Since 1950, he has served as vice president and director of Harbridge House, Inc., a management and consulting firm formed by himself and two other members of the Harvard Business School staff. The greater part of the firm's work concerned military procurement and defense contracting; also involved were research and consulting efforts for the Army, Navy and Air Force, and the Defense Production Board of Canada.

Only the bare bones of the plan to realign the reserves have been revealed but it is enough to suggest that this is a radical plan indeed. Radical in the sense that it envisages a readiness posture that far exceeds anything ever attempted.

However, the plan has good credentials. It was prepared in Army Operations and was submitted to the Joint Chiefs of Staff and the Section 5 Committee of the reserve components.

It may be possible in the highly organized society of today to find men who can take time from their livelihood and their families to engage in multi-weekend drills and three weeks of summer training and it may be possible for select units to trim away the overaged and the undedicated. It may be possible, but it won't be easy.

The brief official statement of the plan has some ambiguities. One that stands out is the assertion that the "objective is to have these units ready for movement to forward areas within three weeks following mobilization." The key to this is to know what is meant by "forward areas." Several suggestions have been heard. One is that this means Fort Bragg, or Fort Hood or Fort Ord, where the units can get down to serious training. Another is that this means a staging area overseas such as Okinawa. A third is that it means just behind the combat area which, in terms of Korea in 1950, would be the Pusan area. These definitions cover a wide and significant range of choices.

The question can also be raised as to whether there will be full support of this program when all of its ramifications are seen. This stricture is based on fairly recent past history. Other ambitious plans for beefing up the reserve components and making them more ready in preference to an increase in the Active Army fell by the wayside—not from lack of effort and will on the part of all components of the Army but because the powers that supported them at the beginning began to back away and whittle at them when the full cost became clear.

In this connection there are many questions about the Defense Department's present attitude towards Army manpower requirements. Space forbids a discussion of all the factors here, but a brief of what seems to be the Administration's program can be culled from Under Secretary Guy Gilpatric's press conference of 6 June. In effect it is this:

It is the "present judgment" of the Department of Defense—and the quoted words are Mr. Gilpatric's—that the Army does not need an increase of 50,000 officers and men to bolster the nation's conventional war forces. The reasoning seems to be that (1) the nation's total armed strength of 2,517,000 is "a pretty big force" and "in terms of military manpower alone [not] very far behind the Soviets;" (2) the Army can do better with the strength it now has; and (3) the ready reserves can be made much more ready.

This deserves searching study in the light of today's conditions.

YAKIMA ISN'T WASHINGTON

Only a few hours of jet- and piston-plane travel separate the Yakima Firing Center from Washington, D. C. Pressurized air ad-

The pilot is inside, flying over enemy lines.

The SD-1 Surveillance Drone flies remotely controlled tactical surveillance missions without risking manned aircraft or pilot. It is extremely mobile, simple to use and maintain, and can be readily adapted to carry TV or film cameras, infrared, radiation detection or radar reconnaissance equipment. The SD-1 is the Army's only operational surveillance drone. Northrop's Radioplane Division developed and produces it.

RADIOPLANE
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justs the body to high-altitude jet speeds but the mind can't accommodate itself to continent-hurdling that fast, and the effluvium from the Potomac flats still clogs the brain as the plane comes down past snow-topped Mt. Rainier and through the clean, dry air of the high Northwest.

You flew out of Washington and away from: "How could Cuba have happened?" "Does Vietnam go down the drain after Laos?" "Why didn't we know that General Chung was going to revolt against Premier Chang?" "Is the New Frontier by-passing the Joint Chiefs?"

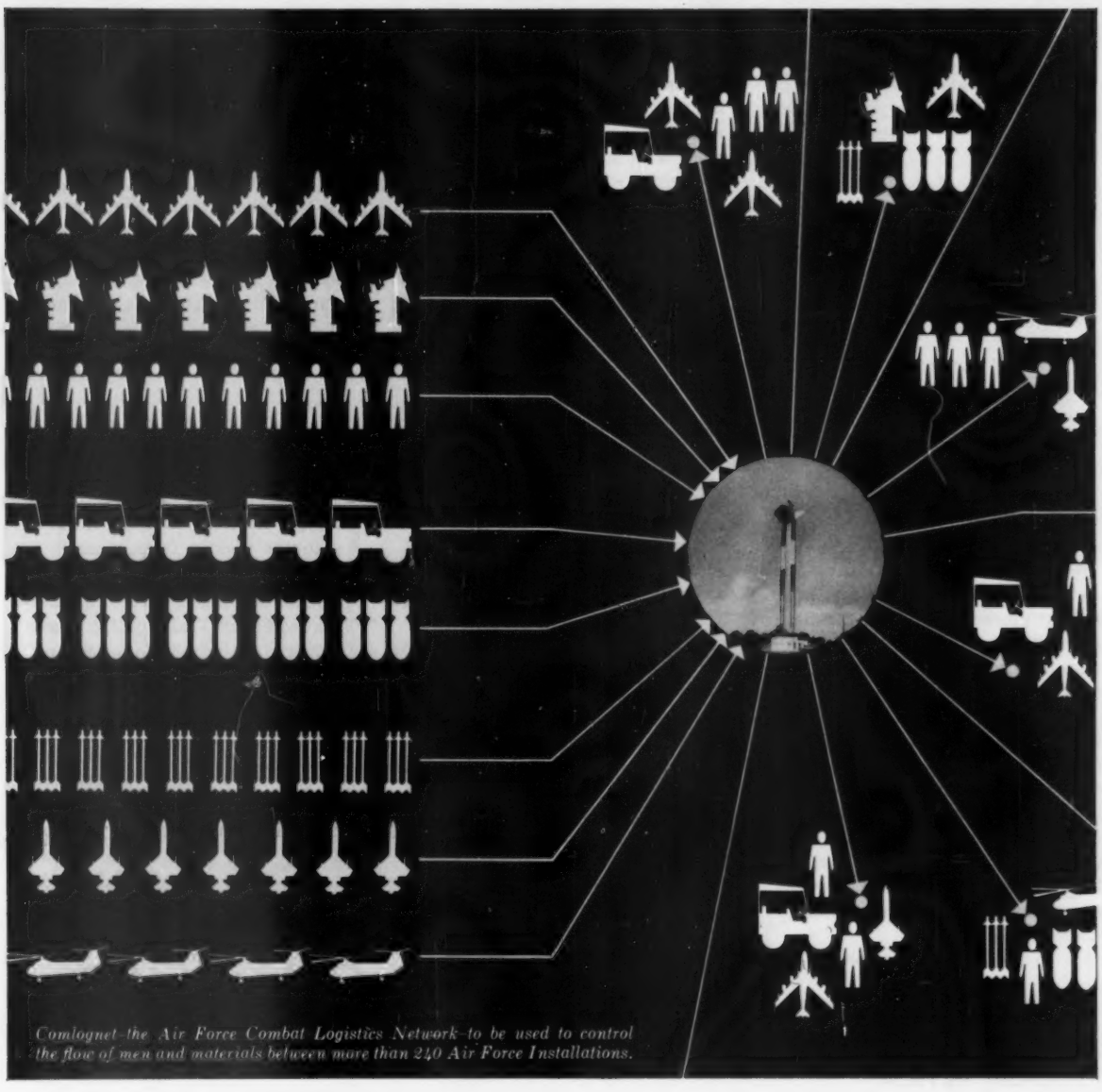
You fly into Yakima and meet an East Coast-based three-star general on his way out. "You're going to see a good outfit in the 4th Infantry Division," he tells you. "In fine shape from top to bottom. Good leaders, good men, well trained, tough. Now tell me, how did that revolt happen in Korea without our knowing it was coming?"

At Lava Plains headquarters you attend the regular briefing and get the big picture. Aggressor, pushing down from the northwest, is beginning to run out of gas, thanks to a stubborn defense by the 4th and paper outfits on its flanks. Both sides have used tactical nuclear weapons and casualties have been heavy. Aggressor has been nasty too, with infiltrating Special Forces type guerrillas. More a nuisance than a threat, the briefing officer says. Still these hit-and-run raiders have forced an increase in rear-area security, especially at night. The briefer reads from an after-action report of an Aggressor group that had parachuted into the 4th Division's rear the night before. The group leader reported little success because of the improved security measures. As members of one infiltrating group approached a rear-area camp, a dog had barked and aroused the occupants. The infiltrators barely got away. "A good watchdog coupled with fast reaction when he sounds off will put us out of business about as quick as anything," the guerrilla leader reported drily. But they had their little successes too. A field hospital surgeon had been captured when the raiders found him in a latrine armed with nothing more than his safety razor. As you leave the briefing an old friend stops to chat. "Say," he asks, "is Washington going to let Khrushchev keep his stooge Castro in Cuba?"

At the Division CP set up under camouflage netting in a dry gully cut deep by flash floods — there isn't a single tree and little other cover on the 437-square-mile reservation—the Division commander and chief of staff fill you in and suggest that you visit one of the battle groups before going over to the "enemy" side. As you climb in a chopper for the flight to the CP of the battle group, someone asks if there is anything to the rumors from Washington that military decisions are being made by civilian assistant secretaries and Presidential assistants without recourse to the Joint Chiefs.

At the battle group CP you quickly catch on to the fact that this is a happy, well-run outfit. The BG was about to be clobbered by Aggressor and the colonel had read all the indicators and knew it was coming. Still he found time for his visitor and was affable beyond the requirements of the circumstances. He had won, as you knew, the DSC in World War II and he knew his way around. You believed him when he told you that his outfit was in better shape and had more know-how than the very good Regular Army outfit he had gone into North Africa with in November 1942. This was so, he said, even though the turnover in command and staff positions is altogether too fast. "Give this outfit a few days of exercise under live fire and we would be ready for anything." A controller was moving

The Commander in Chief is photographed with the Joint Chiefs of Staff at the White House. *From left to right:* Gen. Curtis E. LeMay, the new Chief of Staff of the Air Force; Gen. Lyman L. Lemnitzer, Chairman; Gen. George H. Decker, Army Chief of Staff; the President; Adm. Arleigh Burke, Chief of Naval Operations; and Gen. David M. Shoup, Commandant of the Marine Corps.



Comlognet–the Air Force Combat Logistics Network–to be used to control the flow of men and materials between more than 240 Air Force Installations.

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Modernization of Comlognet is another first for the U.S. Air Force and Western Union. Acting as prime contractor, Western Union designed and engineered this electronic network in participation with other companies.

WESTERN UNION...*finds better ways to speed it electronically*

through the area simulating enemy artillery fire as you prepare to leave. But there was time for the gimmick: "How could we possibly have let that Cuba deal go sour?"

Where the battle group CP had been quietly competent, the Aggressor camp on a distant sun-baked ridge was competent but flamboyant. The outlandish uniforms and the mex rank that made everybody who was anybody a little more so was carried off with a flourish that would have brought twinges of jealousy to veteran actors of Hapsburg Empire light operas. But underneath the exaggerated postures there was competence. These fellows were doing a job and having fun doing it. "If they need us in Vietnam we'll be ready," you're told. "But they better not wait till it's down the drain."

You fly back to that cockpit of politics that is Washington, D. C., and you hear the same questions put, inevitably, in the context of politics. There's no breeze off the Yakima ridge to blow away the stench arising from the Potomac flats.

"PROJECT MOBILITY" AT EUSTIS AND STORY

Big hit of the Transportation Corps' "Project Mobility" at Forts Eustis and Story, Va., was the first public demonstration of the Bell Aerosystems rocket belt. Bell engineer Harold M. Graham showed perfect control of the man-lift device in a dramatic leap over a huge prime-mover.

Although the rocket belt was the imagination-catcher, the six-day program was a demonstration of Army mobility with far-reaching significance. Military observers from the U. S., Canada and Great Britain, as well as civilian leaders in industry and government, saw what the Army can do when called upon.

With the increased emphasis on limited and unconventional warfare capabilities, the demonstrations highlighted aerial resupply and amphibious operations with equipment currently available and items under research and development. They included typical airhead terminal transfer operations using aviation, and a resupply by Army aviation of forward combat units, to include aircraft recovery vehicles.

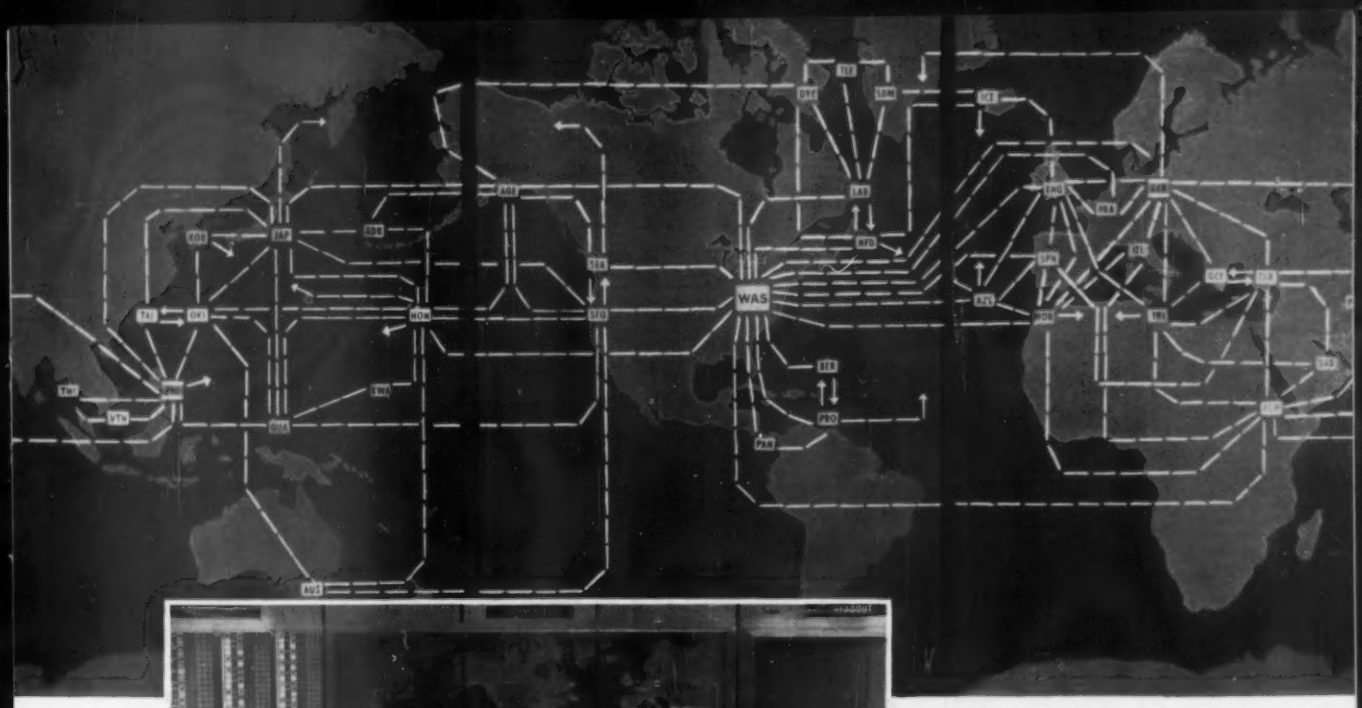
Along the Virginia coastal area the Army demonstrated such items as the 60-ton capacity BARC, the five and 15-ton LARCs, landing craft retriever and rolling liquid transporters. Research and development hardware shown included the Gamma Goat, GOER, electronic homing devices, Marsh Buggy, Bensen Helicycle, and helicopter pickup from a moving ship.

In a late-night problem, the Transportation Training Command conducted an amphibious landing demonstration in total darkness using "see in the dark" infra-red equipment. Observers were able to view the operation normally on special outdoor television screens through the use of specially equipped TV cameras and filtered lighting. The amphibious operation was followed by an air-landing of troops and equipment with night visual approach and radar reflector guide systems.

RANDOM REVIEW

NEW COURSE in Army's Nike Zeus special training program now under way at White Sands Missile Range will familiarize missilemen with power generation systems, refrigeration and air conditioning systems, motors, motor control centers, hydraulic systems and pumps. Course is seven weeks long. ● FORMER ARMY ASSISTANT SECRETARY Fred Korth has been appointed a third civilian Aide-at-Large by Army Secretary Elvis J. Stahr, Jr. The others are Robert T. Stevens, a former Secretary of the Army, and Chester R. Davis, once Assistant Secretary of the Army for Financial Management. ● TAKING A PAGE from the book of Lt. Col. Henry Hamilton, "The Hair Buyer" who held forth in Detroit and paid for American scalps during the Revolution, Communists are now paying bounties to satellite nation patrols who capture American soldiers at border points along the Iron Curtain. ● ARMY NATIONAL GUARD Special Forces units, located in Alabama, Louisiana, North Carolina, Utah and West Virginia, have been reorganized into company-sized units to provide improved administration. ● MAJ. GEN. DONALD MCGOWAN, National Guard Bureau chief, told Congress that many of the Guard's weapons are obsolete—but not much more so than the active Army. ● THE OFFICER STRENGTH of the Regular Army increased by 2,000 last year and Personnel predicts a like increase in 1961. This puts the number of Regulars, of all branches and grades, at more than 40,000. ● NOT ALL OFFICIALS seem to have heard Secretary McNamara when he advised subordinate officials: "when in doubt, under classify" information ● PERHAPS THE BEST-KNOWN face in the Army has done a fade-out from the "Big Picture" TV pro-

(Continued on page 74)



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DOD Information Policy

The public information policies of the Department of Defense require a delicate accommodation of two competing values. As President Kennedy has observed, the challenge of our times imposes "two requirements that may seem almost contradictory in tone, but which must be reconciled and fulfilled . . . the need for far greater public information . . . the need for far greater official secrecy." The reconciliation of these two requirements is particularly difficult within the Department of Defense. In order to provide some further guidance for those who must deal with the problem, I am setting out here four principles. This guidance is intended to help the members of the Department to meet both requirements. While it will restrict the flow of properly classified information in some respects, it will also encourage more open, responsible discussion of the pros and cons of national defense policies and practices.

The four principles are:

(1) In a democratic society the public must be kept informed of the major issues in national defense policy. Because the most important issues are likely to be the most difficult ones, the arguments on both sides must be clear, so that there is a consensus of confidence in the ultimate decision. We are under a special obligation to disclose mistakes and ineffective administration and operations. The public has at least as much right to bad news as to good news.

(2) It is essential to avoid disclosure of information that can be of material assistance to our potential enemies, and thereby weaken our defense position. It is equally important to avoid overclassification—when in doubt underclassify. In no event should overclassification be used to avoid public discussion of controversial matters.

(3) Public statements of what appears to be Department of Defense policy must reflect our policy in fact.

(4) In public discussions, all officials of the Department should confine themselves to defense matters. They should particularly avoid discussion of foreign policy matters, a field which is reserved for the President and Department of State. This long-established principle recognizes the danger that when Defense officials express opinions on foreign policy, their words can be taken as the policy of the Government.

ROBERT S. McNAMARA
Secretary of Defense

ARMY editorials

Tale of Two Soldiers

If the nation were seriously discussing the obligations of individual citizens in response to the President's call for all of us to ask what we can do for our country, a North American Newspaper Alliance story under the headline "U. S. Sergeants Fight Barbarism in Laos" would have been on the front page and not buried on page 8, Section C, of a Washington newspaper of 24 May.

The story told of two U. S. soldiers—a Master Sergeant "Beetle" [no other name supplied] Bailey and a Sergeant Kal Phillips, the latter a medic—who "live and work and support the people and the royalist army" in a tiny Laotian village deep in guerrilla country. These two men are not asking what they should do. They are doing something for the United States.

On the morning the reporter had visited the sergeants a guerrilla-planted land mine had been hit by a truck and 15 persons had been injured or killed. This was part of the harassing tactics the Communist guerrillas pursued to put pressure on the peace talks and to alienate the villagers from the government, through terror, and to weaken it.

One of the persons injured by the land mine was a woman eight and one-half months pregnant. Sergeant Bailey told the reporter of how they had tried to save her in these words:

> We blew breath into this woman for an hour and a half. Then she died. They wouldn't bring a "chopper"; told us over the radio the helicopters had more important missions—like taking delegates to the peace talks. What's more important than a dying woman?
>
> When I breathed into her mouth, blood came up. I spit it out. When you worry about a person's life that doesn't bother you.
>
> The Laotians just stood around helplessly. Some guy laughed and said "boni" [it doesn't matter; I couldn't care less]. I could have come up swinging, but I didn't want to stop the rhythm.
>
> The woman's veins had contracted so far we couldn't get the smallest needle in. If I had to do it again, I would take the child out; then one or the other might have lived.
>
> You got a wife? You ever see a pregnant woman die?

The medic, Sergeant Phillips, described by Sergeant Bailey as being "more deserving of the title of doctor than sergeant" had two Buddhist images hanging from his neck.

"It never hurts to go first class," Phillips told the reporter. "It helps when I give medicine to the Laotians. They believe me and take it."

In the nature of our over-organized mid-century society, we Americans are forming a Peace Corps that is to perform good works in far corners of the world. This is a fine idea and we hope it turns out to be one of the great accomplishments of Organization Man. But it isn't new. The jobs of Peace Corpsmen have long been performed on far frontiers by Americans and more often than not they wore Army uniforms and weren't above hanging native charms from their necks; men like Major Walter Reed and Sergeants "Beetle" Bailey and Kal Phillips.—J.B.S.

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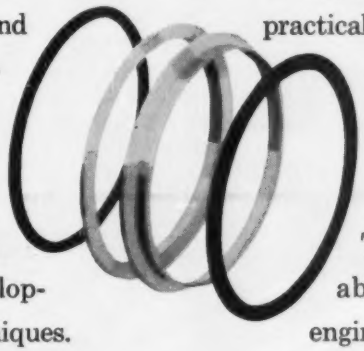

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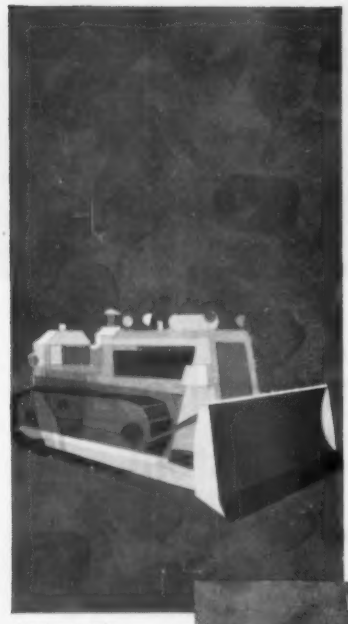
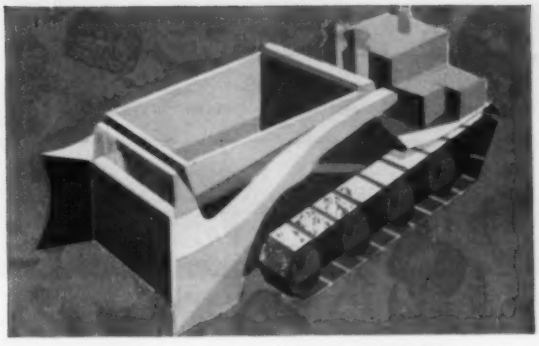
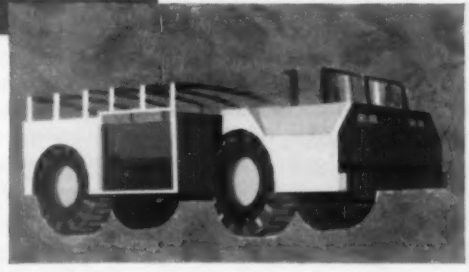


Air-droppable Tractor Bulldozer



Universal Engineer Construction Machine (under development)

8-ton GOER (under development)



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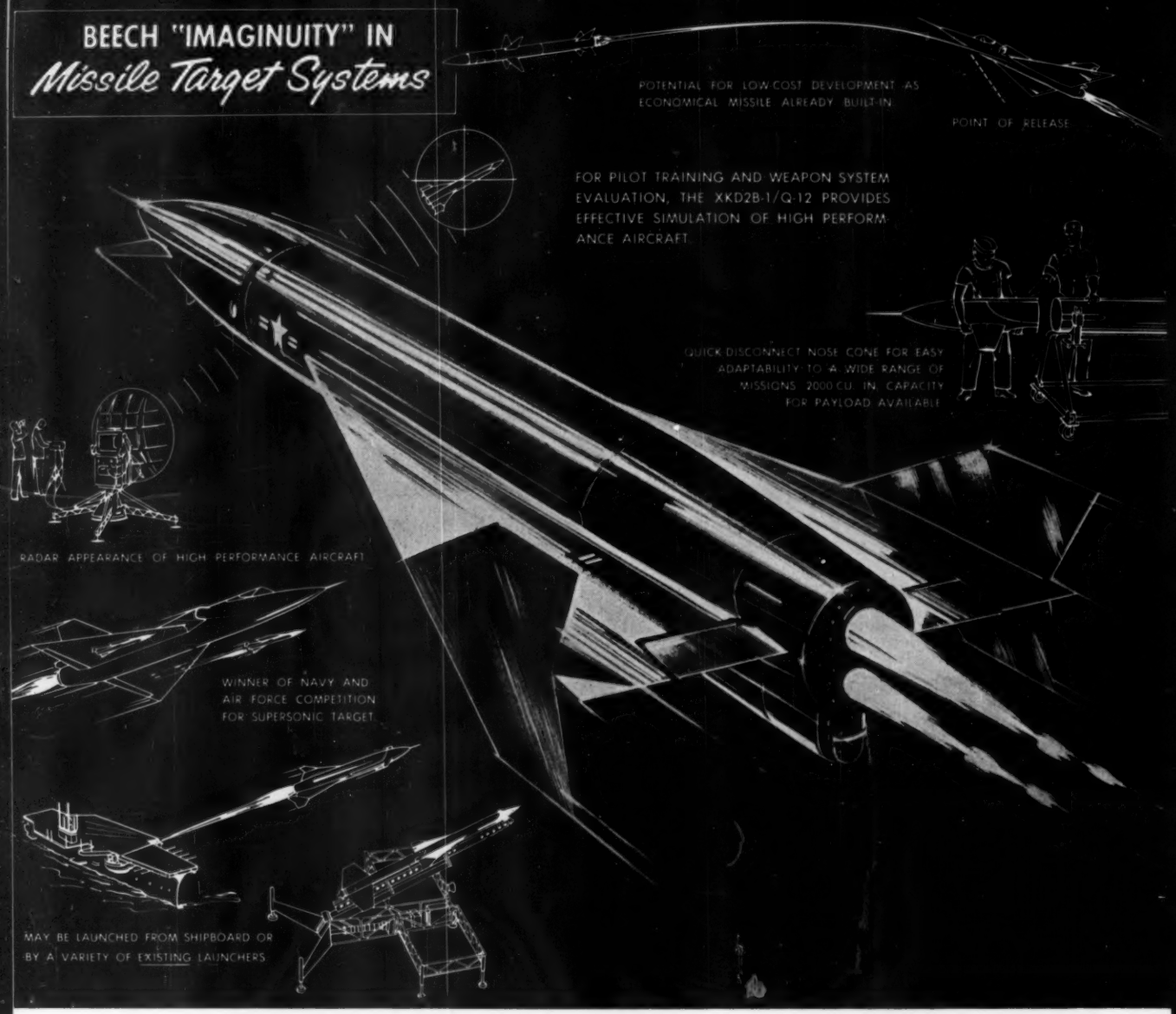
BEECH "IMAGINUITY" IN
Missile Target Systems
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THE QUESTION OF CARS

Can the Combat Arms Regimental System be made a useful tool that provides a link with the past and a stake in the future?

By MONTE BOURJAILY JR.

LAST February, while he was still Deputy Chief of Staff for Personnel, General James F. Collins told Congress that "the Combat Arms Regimental System is accomplishing the purpose for which it was developed."

Is it?

Does every soldier in a member unit of a CARS (Combat Arms Regimental System) regiment "take pride in his membership," as General Collins said? Does today's soldier in a combat unit realize that his membership in such an outfit provides him with a "link with the past?" Do veterans, indeed, as General Collins stated, have a "stake in the future" because CARS exists?

Or is CARS weak, useless, a paper exercise, as has been charged in these pages on more than one occasion?

The facts appear to be somewhere between these two extremes. For while CARS, approved by the Secretary of the Army on 24 January 1957, is in operation, it is only partly implemented. And it is opposed by many, ignored by most, and misunderstood by almost all.

Sentimentalists and traditionalists plead for the "return of the regiment"—the "home" of the career soldier for the Army's first 160 years. They ignore the realities of today.

The trend is clear. Fewer and fewer men, having greater and greater firepower and mobility, will be responsible for controlling broader and broader areas until the planners, military scientists, tacticians, and their computers have "optimized" the variables of men, materiel, money, mobility, communications, vulnerability and other factors they crank into their equations to create a basic tactical unit with no resemblance to the traditional regiment.

"CARS has a twofold purpose," General Collins reported. "First, it maintains the continuity of the Army's most distinguished regiments, regardless of changes in tactical organization or in the size and composition of the Army. Second, it provides every combat arms soldier the opportunity to be a member of a distinguished and historic regiment.

"In order to accomplish this twofold purpose, it was necessary to remove the regiment from the tactical structure where it was vulnerable to inactivation or consolidation, as the size and composition of the Army changed. Under CARS, a regiment is institutional rather than tactical."

Reorganization disrupted lineage

The regiment, in spite of the emotionalism of its supporters, has not been the "firm rock on which to found" a military career. Just how fragile the regiment has been appears evident when we review Army organizational history.

For instance, in 1920 there were 65 regiments of infantry. By 1932 they had been cut to 38. In

1940 the number was raised to 88. During World War II, this number was increased to 288 (including Army Reserve and National Guard) as of June 1945. By 1956 the number had dropped back to 52 regiments of infantry, of which nine had not become Regular Army units until 1947. (In addition, there were three dismounted cavalry regiments, organized as infantry.)

Since 1784, when the First American Regiment (now the 3d Infantry) was organized for active service—the beginning of the "permanent Army"—the number of regiments in the Active Army has varied from one to 297 (in World War I).

In the other combat arms the picture is similar. From 1820 to 1861 there were five regiments of artillery. From 1901 to 1908 there were none. From 1908 to 1941 there were varying numbers of regiments, and in 1941 the regimental structure disappeared from the field artillery.

Meanwhile, between 1901 and 1917 there were no coast artillery regiments. In 1917 and 1918, coast artillery companies that were surplus to coastal defense needs were organized into provisional regiments, many of which went to France to provide heavy artillery support for the AEF. Not until 1924 did the regimental structure return to the CAC in its primary role of coast (and additionally antiaircraft) defense. About 1943, the regimental structure was again dropped.

Armor and cavalry also have seen the regimental structure change and change again. Armor began as battalions in the brigades of the Tank Corps. In 1929 a tank regiment was organized. This regiment became the 66th Infantry (Tanks), then the 66th Armored (Light). With only two exceptions, the armor branch fought World War II in a battalion structure. Finally in 1945 the regiment was dropped completely as a tactical armor organization.

Cavalry too has been variously organized as regiments, then groups and finally as armored cavalry. Today the only tactical regiments in the Army are the five armored cavalry regiments, one of which is little more than a training command.

Or consider the history of one of the Army's more notable infantry units—the 16th. (Any other could have been selected. We stick to infantry because of the complexity of regimental lineages in the other arms.)

There have been *five* 16th Infantry regiments since 1798, with no historical connection between them.

The first 16th Infantry was constituted on 16 July 1798, never organized, and on 15 June 1800, finally discharged (disappearing forever from the Army's rolls). The second 16th Infantry was constituted on 11 January 1812 and, in 1815, was consolidated with regiments then designated 6th, 22d, 23d and 32d to form the 2d Infantry (which has continued under this designation to the present). Some of the War of 1812 battle streamers displayed on the colors of today's 2d Infantry were partly earned by what was, from 1812 to 1815, the 16th Infantry.

The third 16th Infantry was created for the Mexican War on 11 February 1847 and disbanded on 10 August 1848, joining in oblivion the first regiment to bear this designation. Still a fourth 16th Infantry was constituted for the Civil War on 3 May 1861. On 18 April 1869, it was consolidated with the 2d Infantry so that still another 16th Infantry added to the honors which today the 2d Infantry displays. This explains how the 2d Infantry could apparently be in two places at once: it shows streamers from the campaigns of Northern Virginia and also from those in the Mississippi Valley and Tennessee, for battles which took place simultaneously.

Meanwhile, and also on 3 May 1861, the 1st Battalion of the 11th Infantry was constituted. In August 1861 it was organized in Massachusetts. Under this designation it fought through the Civil War, earning honors in the various battles in Northern Virginia. On 21 September 1866, the 1st Battalion was expanded and redesignated 11th Infantry. Finally, on 6 April 1869, the then 11th and 34th Infantry Regiments were consolidated. The new regiment was given the designation 16th Infantry, which it carries today.

(Today's 11th Infantry? It is also the fifth regiment of this name. The current 11th Infantry began as the 2d Battalion of the 15th Infantry, became the 24th Infantry in 1866 and, after consolidation with the then 29th Infantry, was redesignated 11th Infantry in 1869.)

The CARS concept

CARS was designed, among other things, to end the chaotic organizational history with which the Army was plagued from 1784 to 1957.

In 1957 the Army "institutionalized" 56 infantry regiments, 12 cavalry regiments (five remained tactical), and 10 armor regiments. In 1958, 74 artillery regiments were institutionalized and 18 infantry regiments from the Army Reserve were, for political reasons, added. In 1960 action was taken to institutionalize one Special Forces regiment. In theory, today there are 175 institutionalized regiments (this includes the five tactical cavalry regiments) in CARS, and all combat arms units of the Army, of battle group size or smaller, belong to one or another of these regiments.

In operation CARS consists of 170 regimental headquarters that have no personnel, equipment, or geographic location. These headquarters, which are considered "active," are assigned to the Department of the Army. Theoretically, each regi-

ment can supply 15 headquarters type elements (from the 1956 infantry regiment TOE) for units which vary from battle group down to company, battery or troop.

When the Army requires a tactical unit of a particular arm, The Adjutant General's Office nominates a designation for the needed unit. Normally, it selects such a designation from one of the CARS regiments which has the least number of active elements and which is also parent to other elements of that arm equipped either with the same weapon or with a weapon designed to perform an equivalent mission.

(This "normal" method is not followed with the first seven artillery regiments, which are "composite" regiments where repose most of the history and tradition of the artillery branch. They are parents to tactical elements of both field and air-defense artillery.)

This is CARS as it operates today. As a device for providing designations for tactical units, CARS indeed accomplishes the purpose for which it was developed. And if commanders desire, CARS can be made to supply to active units a degree of linkage with the past.

Linking with the past

Some commanders do so desire. The commanding officer of the 2d Reconnaissance Squadron, 7th Cavalry, seeks information about the history of Troop B, 7th Cavalry—particularly during the period 1866-1890, for example. Troop B is now Headquarters and Headquarters Troop, 2d Reconnaissance Squadron, 7th Cavalry.

(What a ponderous way to refer to a unit, that last phrase! Notice the alternative used in the examples that follow. It could be extremely effective for informal use if widely adopted.)

When the 1st Rakassans (1st Airborne Battle Group, 187th Infantry) was sent to Lebanon, a strange development occurred at Fort Campbell. The fiercely competitive troopers of the other four battle groups of the 101st Airborne Division showed marked respect in place of the usual pugnaciousness toward members of the 2d Rakassans (2d Airborne Battle Group, 187th Infantry). Members of the 2d Rakassans walked a little taller, knowing that fellow troopers of their regiment were under the gun, even though 3,000 miles separated the two battle groups.

In 1959 the colors and representatives of the three organized battle groups (two active Army, one Army Reserve) of the Old Guard (3d Infantry) were massed in the Field House at Fort Myer for the Old Guard's organization day ceremonies. Correspondence is maintained between the 1st Old Guard at Fort Myer, the 2d Old Guard in Korea with the 7th Infantry Division, and the 3d Old Guard at Fort Snelling, Minnesota, with the 84th Infantry Division. The 3d Old Guard was moved to Fort Snelling from Minneapolis at the specific request of the CG, 84th Infantry Division, who saw the historic connection between the 3d Infantry and Fort Snelling where the regiment was stationed during most of the period between 1874 and 1898.

These are simply three examples that come to mind. A number of other tactical elements of CARS regiments and their commanders are interested in discovering tradition, reviving ceremonies, bringing histories up to date. Unfortunately this desire does not seem to exist in the majority of tactical combat arms units.

Putting this important part of the CARS concept into effect has been largely left to commanders. How much more would be possible with a little more apparent support from Department of the Army!

Most of us are aware of the pageantry that surrounds the New Year's day football games at the various Bowls.

Imagine the benefit to the Army of the appearance in, let's say, the Shriners Parade in San Francisco, of a float depicting the history of "San Francisco's Own": the 30th Infantry. Accompanying the float are elements of the Sixth Army band, the colors of the regiment and behind them those of the regiment's battle groups, an honor guard or detachment of men from these battle groups and of veterans of the Friscans, too.

Here would be something with which the people of San Francisco could identify, something that would make them feel that part of the Army "belonged" to them and that they had a stake in the Army.

How to achieve this? (In today's "economy climate," that is.)

A home for the regiment

First, there must be a regimental headquarters. For the 30th Infantry, this could be at the Presidio of San Francisco. The headquarters would be manned by the regiment's executive officer—a field-grade officer from the active army—with a two-man active Army force consisting of a senior noncommissioned officer who had served with the regiment and a clerk. This officer could have "additional duties"—for example, with Sixth Army's information office, with the recruiting service, or in the Reserve component.

Part of the space provided for the regimental headquarters would serve as a museum, part as an archives, and part as an office. In addition to the three-man active Army element, two groups would maintain these elements of headquarters, 30th Infantry. One group would be Reserve members of the 30th Infantry from the San Francisco area. The second would be mobilization designees

who are specialists in information or personnel administration. A third group could be added if proper administrative controls could be developed, possibly with the help of Congress. This third group would be members of the regimental association.

Working together, the regiment's "One Army" members—active Army, reservists and even veterans—could create in San Francisco an image of the regiment which could not fail to improve community and public relations for the whole Army.

In most persons the necessity for "belonging" is great. The Army is too big for most to accept it as a unit to which they "belong." They can "belong" to a regiment. And membership in a regiment means acceptance of membership in the structure of which the regiment is a part. There need be no competition for a soldier's loyalty between the regiment and the Army.

Community and public relations activities, including recruiting for the regiment and for the Army, are only a beginning of the possibilities inherent in CARS.

Equipped with modern punched-card transceivers, a regimental headquarters could maintain at least the more permanent records of the members of its tactical elements. It could then serve as a clearing house for inquiries about these members and could maintain contact with veterans of the regiment after they go off active duty.

There is no reason why a regiment should not have an honorary colonel—a distinguished former member, for example, or a respected high official. Careful selection of this "colonel" (normally a senior Army officer, active or retired) might make the tactical elements of the regiment more effective. A conscientious regimental colonel could strive to assure that his regiment's tactical elements know the meaning of their membership and conduct themselves in such a way as to add to the glory of the regiment's history and tradition.

While such ideas as these cannot be carried out without expense, the cost seems slight compared to the potential benefits to the Army. And if it can be made possible for regimental associations to be actively conjoined to regimental headquarters, contributions could be accepted. Many a regiment in the "good old days" was named beneficiary in the will of a veteran.

Other benefits from CARS

More revolutionary are some of the other, perhaps more remote, CARS possibilities.

With some reshuffling of either units or missions, OVUREP (Overseas Unit Replacement) could be brought under the CARS concept. This was originally contemplated by the planners of CARS. The possibility (and difficulties) became obvious after only a little analysis.

While most admit that current Army organization is far from final, it remains unlikely that ever again will the regiment be a tactical unit. Yet we will continue to need tactical units. Institutional CARS regiments can continue to serve as parents of such tactical units regardless of how they are organized.

Suppose we permit a man to enlist for an entire Army career in a CARS regiment. Could this be worked out? With the Army deployed as it is today, it seems possible, with a little effort on the part of the Army staff.

Imagine, for example, that a man enlists for the 3d Cavalry. He is sent for training to Fort Knox. Company A, 1st Training Regiment, U.S. Army Training Center (Armor), has been redesignated Training Troop, 3d Cavalry, USATC (Fort Knox). The troop is organized with a cadre of 3d Cavalry veterans. Whatever the source of recruits reporting to the troop for training, the chances that they would reenlist to remain with the 3d Cavalry would increase if these veteran cadremen showed the regiment to good advantage and if they were indoctrinated with the 3d Cavalry's tradition and history.

If each continental army had a training center at which each of the CARS regiments assigned to it had a training company, battery or troop, not only would it be possible to make an Army career more attractive, but also the quality of training given combat arms recruits would improve. The improvement could be attributed to three factors: the high quality of the cadremen; the more effective motivation of soldiers who would belong to a unit from the moment they joined the Army; and the competition between the training companies (batteries, troops) which made up each training center. Incidentally, those soldiers requiring school training would, in such a scheme, not lose their membership in the regiment to which assigned but would rejoin it for duty after schooling.

Training completed, our volunteer is sent, as an individual, in a packet or in an OVUREP unit to join one of the tactical elements of his regiment.

(The 3d Calvary was deliberately chosen for this example, for the reason that it is a tactical regiment. For CARS to work properly, the five armored cavalry regiments should be recognized as armored reconnaissance groups with squadrons from the regiments. There are a number of armor-calvary units, loaded with honors, that should somehow be restored to the rolls of the Army. For example, the 70th Tank Battalion has more decorations than any armor regiment in CARS. It would look well, reorganized, redesignated and activated as the 70th Armored Reconnaissance Group, in which were included, for example, the

2d Squadron of the 2d Cavalry, the 1st Squadron of the 3d, and the 3d Squadron of the 6th.)

At the end of his first assignment, which normally would be overseas, our 3d Cavalry trooper might join a CONUS squadron of his regiment, or he might be sent to school, or he might serve in a branch immaterial assignment which the 3d Cavalry had been required to fill with a man of his qualifications.

His CONUS service completed, the trooper could go overseas again, even to a theater in which no element of the 3d Cavalry was present. Again, he might fill a branch immaterial assignment in that overseas command. Then, back to the States, where he might join the cadre of the Training Troop, 3d Cavalry. And so his assignments would continue. He would remain a member of the 3d Cavalry, sometimes serving with a tactical element, sometimes on TDY away from the regiment.

By the use of proper (and somewhat personalized) procedures, inequities in assignment to "desirable" and "undesirable" areas, not only from the soldier's point of view but also from the point of view of the Army, could be prevented.

For this to work, regimental headquarters would have to grow, to become an operating headquarters. But except in full mobilization, the headquarters would never be concerned with more than 3,000 members, which means an average of 1,500 assignments a year or about 30 a week to be handled at regimental headquarters. Certainly this number is not too great. With automatic data processing systems, the Pentagon would have little trouble retaining supervisory control. The resulting decentralization would necessarily cut down the vast central assignment offices in the Pentagon and at continental army headquarters.

Management of the careers and assignments of junior officers, perhaps through the company grades, would be subject to the CARS concept. Without going into details or becoming involved in exhaustive argument, we can say that we have heard a strong case made for just such a step.

There is a place for the regiment

Under CARS, there is a place in the Army for the regiment. But before that place can be filled, a series of events must occur.

First, the CARS concept must be understood, accepted, and supported in the highest places, both in the Army staff and in the field.

Second, regimental headquarters must be established. This step is a part of the original CARS program. So far it has failed because of cost. This expense, in turn, has been too great because of the size proposed for regimental headquarters. The three-man headquarters we propose, located on government property which is otherwise unused or little used, supported by Reserve personnel and by regimental associations, meets most of the objections to cost.

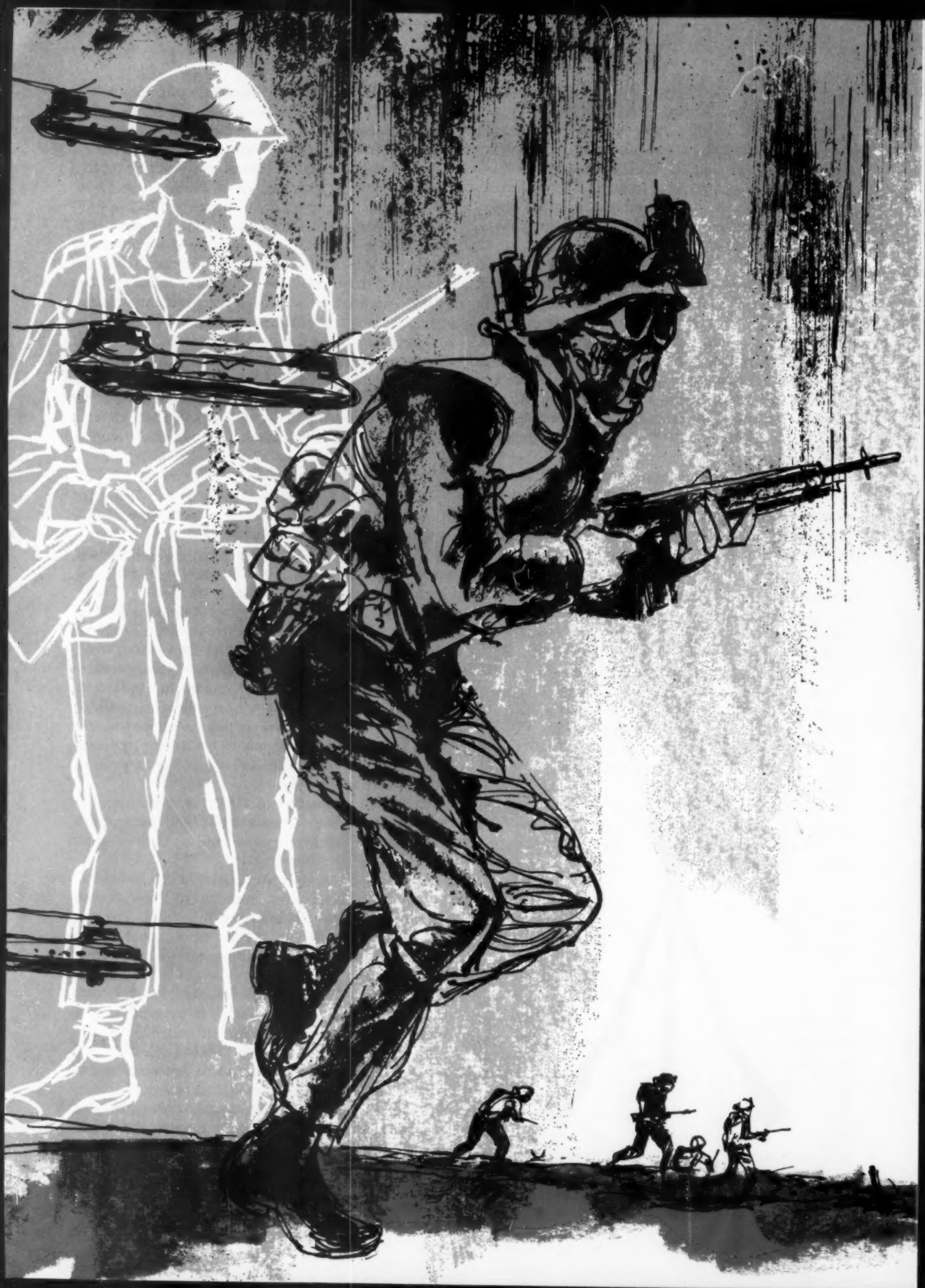
Third, the potential of CARS in various areas important to the Army—public and community relations, recruiting, morale and so forth—must be examined and developed.

If commanders and staff officers can be indoctrinated in CARS and made to see how it can become a tool for their use in improving motivation, increasing effectiveness of tactical units, and otherwise achieving the goals of the Army, CARS can be vitalized.

Perhaps OVUREP cannot be worked into CARS. Perhaps it is too much to promise that a man can join a regiment for an entire Army career. Perhaps officer career management is too centralized and too complex to be decentralized to a regimental headquarters. Perhaps. . .

And perhaps CARS, judiciously developed, can become a tool of the Army to achieve these and other goals.

The potential exists if we will do a little missionary work, use a little imagination, and expend a lot of effort.



The Land Battle in an Atomic War

You might be able to turn a three-masted schooner into an aircraft carrier, but it wouldn't be a good one.

Maj. Gen. HAMILTON H. HOWZE

A REALLY proper treatise on the subject of our title is quite beyond my capacity. During the past several years, I have tried to write such a thing three times and have three times failed. And inasmuch as I have seen no other attempt on the subject, except for an occasional Sunday-supplement approach, I conclude that everyone who has struggled with it had the same experience that each time befell me: collision with too many prickly and embarrassing questions, without answers.

Perhaps the common error has been that we have tried to prove that such-and-such a force can fight and *win* the land battle in an atomic war; and that is probably too much for a single mind to accomplish, especially in view of the almost total lack of human experience in the area. In all history only two atomic warheads have been exploded in wartime: both were delivered by air, at very long range, by large aircraft on purely strategic targets. It would be difficult to develop a sound treatise on armor tactics if military history provided us with no more than an account of the unopposed action of two old-fashioned tanks against unconventional targets under very special conditions.

So we shall attempt to arrive not at a positive solution, but simply try to shed some light on the problem. Such light as may evolve will be tactical, not technical. While the technical aspects are important and difficult enough, we know a good deal about them. Very little if anything is known about atomic tactics; but they too are important and, I think, even more difficult.

We will confine our discussion to the land battle in an atomic war, and not enter into the argument as to whether another struggle would be atomic or "conventional." I think we must concede that the nature of another war is unpredictable, that it might very well not be atomic but, on the other hand, it *might* be, and that we must be prepared to meet either possibility.

Please note also that the subject is the land battle, not the employment of the army, in an atomic war. There is a difference in the philosophy of approach. The problem is not to justify the

need for an army in atomic war, but how best to fight the battle whose outcome will decide which side controls that part of the earth's land surface under contention. We must be prepared to admit that if any system, however unusual and however different from our current system and means, can be shown to provide the best answer as to how to win the land battle, then we should adopt that system, whatever the effect on the Army as we now know it. Moltke said that everything in war is subject to change; only change is permissible.

Maneuvers patterned on World War II

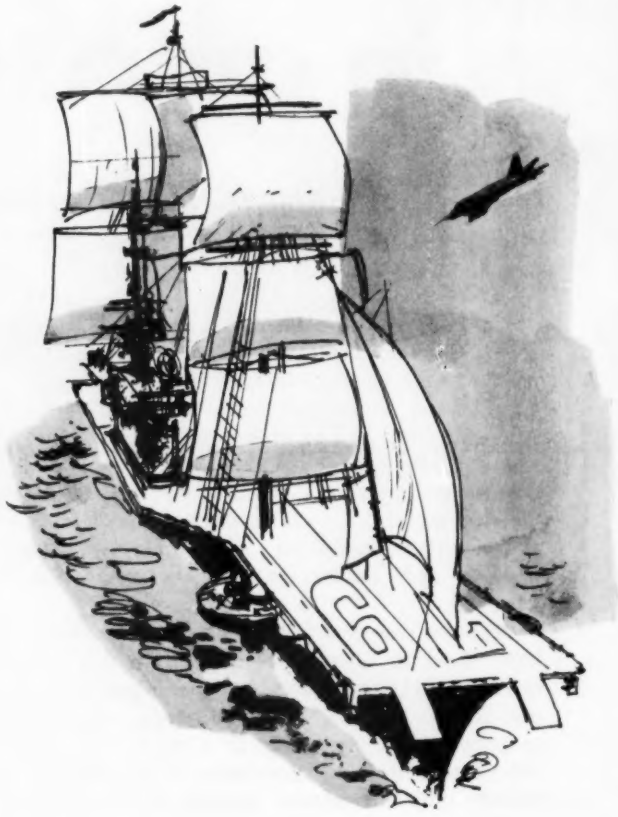
When the subject of tactics in an atomic war is mentioned, officers invariably answer in terms of the employment of conventional divisions and battle groups and battalions. Leavenworth teaching follows the same pattern. With exceptions only in their minor phases, all major maneuvers of the U. S. Army follow the pattern of World War II. To be sure, a few "atomic strikes" are cautiously injected into the maneuvers, but very little attempt is made to go realistically through the drill of troop warning, casualty evacuation, troop evacuation of fallout areas, damage control, and the like. Neither do we take into anything like sufficient account the tactical effect of enemy strikes on ourselves; or the fact that each side will have *many*, not just a few, atomic weapons. Why don't we do these things? Because we cannot: we have not the means to overcome the difficulties imposed.

For, what we have attempted to do is to tailor a conventional field army to meet a most unconventional war. To exaggerate a bit, it is as though we attempted to rig a three-masted schooner to serve as an aircraft carrier, fitting her with engines but making sure she could still, under certain conditions, proceed under sail.

Now we must repeat the obvious: certainly, we must be prepared to fight a war in which atomic weapons will *not* be used. It would be mighty handy if we could develop a single type of division, say, to do either job in an acceptable fashion. Yet, because of the tremendous impact which a liberal use of atomic weapons will have on ground forces, I doubt the possibility of developing a force which will not, in some of its parts, be ineffective in conventional warfare, and in other of its parts be very ineffective in atomic warfare. We can say that the Army's current structure will, with a considerable degree of efficiency, meet the demands of conventional war, for it is experience in that kind of war that got us into the shape we're in. But it is not wise to assume that the same structure is at all acceptable in an atomic war. At the risk of belaboring the point, let me put you in the position of the commander of a reinforced division. You are fighting an engagement in which you and the enemy may each unleash, say, six or eight or more atomic weapons *a day*. I have some questions for you.

Questions for a nuclear situation

- How do you warn all your advanced elements of an impending friendly nuclear strike? Inability to do this will prevent your use of nuclear weapons except on an elaborately pre-planned basis, or deep in the enemy rear, neglecting all targets of opportunity and what might be called emergency targets.



- How do you instill in your men, who presumably are of average quality, the fortitude necessary to stand up to the threat of wholesale annihilation, plus the fortitude necessary to carry on in the face of very large losses to companion units?
- How do you prevent your forces from mingling with the enemy's, thus inhibiting your use of nuclear weapons?
- How do you solve the conflicting requirements of concentration of force to do a job in the conventional manner, in the face of the requirement for dispersion?
- How do you prevent units or parts of units

from moving into areas of induced radiation?

- How do you move these large and ponderous forces quickly out of a large threatened area, or an area of fallout?
- How do you evacuate the many hundreds of casualties instantly inflicted by the enemy's nuclear or chemical weapons?
- How do you acquire on the battlefield—not once, but again and again—the very large batches of men (or whole units) necessary to replace losses in combat units?
- How do you hide (and thus protect from destruction) the large, immobile CPs and signal installations necessary to control these forces?
- How do you move the enormous quantities of necessary supplies across areas of general atomic destruction?

It's easy enough to run your eye down the list of questions (the list could be considerably expanded) and shrug them off, but a conscientious effort to *answer* them, to achieve a really workable solution, will ruin your evening.

So we must start pretty much from scratch: what kind of force is needed to win the land battle? As I have indicated, I have no sure solution. I raise the issue simply because it should be raised, mulled over, and vigorously disputed among our best officers—and from this process a solution may, indeed, evolve. I shall attempt to present the shape of the problem, and even in this I will of necessity be very incomplete.

Some working hypotheses

First, I submit these as working hypotheses: Atomic weapons, and certain chemical weapons, would have devastating effect if accurately placed on troops not fully warned and prepared. Other hypotheses as obvious as this will not be stated. This one needs to be stated because of the startling tendency to ignore it. Atomic weapons hurt people.

If each side had six or eight atomic weapons on a division front during the course of a day of heavy fighting, the staff work, target acquisition, troop warning, troop protection, troop movement, casualty evacuation, damage control, battlefield resupply and all related processes would have to be able to cope with that quantity of weapons—delivering the friendly weapons with maximum efficiency, and absorbing the hostile ones with minimum dislocation. If one side achieved these capabilities and the other did not, the outcome would not be hard to predict.

Obstacles, always a vital factor in battle, would assume even greater importance, for the atomic weapon, without warning, will create new ones, greater than we have ever had to face. How, for example, do you supply the infantry of a conventional division that is on the far side of one or more defiles and in range of the enemy's atomic weapons? On what basis will you dare move heavy forces across a major river when the enemy's weapons can *surely* demolish whatever bridges you leave behind you? A river, swamp, or mountain range in your immediate rear will be more dangerous than the same feature in your front.

Conventional heavy transport aircraft can no longer deliver troops or supplies if to do so they must fly over an enemy armed with refined weapons. Ground-to-air missiles won't permit it.

The demands on the courage, training and initiative of combat troops will be very great. Here it is pertinent to propose that we arrive at a candid conclusion on the subject of the quality of the average soldier. All we have to go on is opinion, based on experience. My own opinion, garnered not only from experience but also from extensive conversation with many other officers, plus reading after-action reports (usually unreliable, I admit) and books such as S. L. A. Marshall's, is that only a small percentage of the average company does a very large percentage of the fighting. One of the finest infantry battalion commanders I ever knew, who earned the Medal of Honor (and multiple wounds) in World War II, told me that he seized his objectives with a mere

handful of his men; the rest contributed next to nothing to the effort. Department of the Army records show that in combat a large proportion of soldiers do not fire their rifles, whatever the situation. This, then, raises the question as to whether the *average* soldier is worth the trouble of maintaining him at the far end of a long and terribly difficult supply line.

The matter of what constitutes acceptable defense warrants serious re-examination. For ex-

ample, to meet the requirement of "holding" a hill, must we physically occupy it? Before you answer too quickly, remember that an enemy with atomic weapons can destroy or neutralize anything you put on that hill, regardless of the number. This is one of the basic contradictions we face: in anything but very immobile position warfare, the more strongly we occupy a certain piece of terrain the more we invite nuclear destruction of its garrison. Perhaps we must admit that, through physical occupation, we cannot surely hold anything, and be content simply with the ability to deny enemy occupation. If this is true, our general concept of defense must undergo radical change.

The weight and effectiveness of atomic support firepower do not depend on the size of the unit supported, no more than the weight of an artillery concentration depends on the rank of the forward observer. Quite obviously, they do depend on the quality and responsiveness of the delivery means, the ability of the supported unit to acquire targets, and the ability of the supported unit to *accept* the support; that is, to protect itself against the effects and to exploit the results.

Even though atomic weapons are used liberally, some form of conventional attack will also be used —alone or in combination with atomic weapons. Thus, we must retain a means to combat the effect of enemy attack on a broad front, and of

his infiltration tactics. Likewise, when we seek to move into ground occupied by the enemy we must be able to cope with his detachments and positions that are not worth the employment of atomic weapons.

A reasonably secure system of supply is necessary. In *many* circumstances we cannot depend on our ability to move very large tonnages to the forefront of the battle, because of the enemy's ability to interdict our lines of supply with atomic weapons.

Mobility, elusiveness, and concealment will be at a premium. Together with the ability to inflict damage on the enemy, they are vital to survival on the atomic battlefield. We can exploit the effects of our own weapons only through mobility, which must include the ability to cross obstacles. Only through elusiveness, which depends on mobility, deception and concealment, can we hope to avoid offering the enemy lucrative atomic targets and save ourselves casualties and damage beyond our capacity to replace.

The ability of close support aircraft to survive is unknown, but it would be a serious mistake to assume that they cannot fight at least in the area of contact. I would expect that in the next war some sort of bombing and strafing aircraft, as an invaluable supplement to artillery, will support land forces.

Thus far, we have managed only to paint ourselves into a corner, doing little more than offer destructive criticism to the effect that our present structure and tactical doctrine are not sufficiently capable of coping with atomic land warfare. Perhaps minor modifications of structure and doctrine will accomplish the end. I certainly don't know, but I doubt that they can.

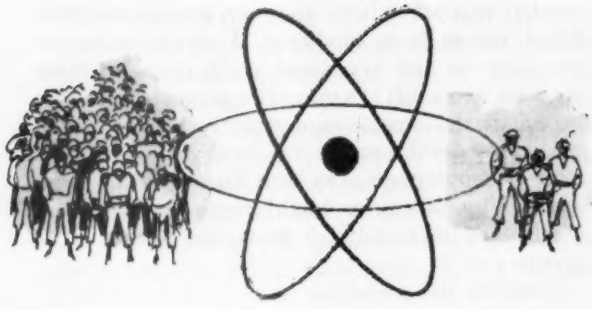
Alternatives with major modifications

Now we will set forth an alternative that involves major modifications. Of course, I have not thought through all the implications of this scheme, for such a task would require the efforts of a sizable staff. My proposal will therefore bring to mind many questions not answered here, partly because of space, partly because I don't have the answers. But having now made this apologetic introduction, we will back our points with arguments as strong as any that can be mustered.

It would appear that in a truly atomic land battle, the units at the forward edge of the battle area must be small. Small units properly equipped or supported by target acquisition means and communications may be given the same degree of atomic fire support as that given large units. Just as gunpowder some years ago served to raise the battle potential of the little man to the level of that of the big man, so has the atom served to equalize the killing power of the small combat groupment and the big one.

In the face of an enemy determined to choke off the lines of supply with atomic weapons, large units in forward areas, in rough terrain, or on the far side of rivers, cannot be logistically supported. This point, if accepted, is pretty compelling.

The demands on units in forward areas as respects courage, skill, elusiveness and quick reaction all point toward small forces—of superbly equipped, selected, highly motivated and superbly trained men. Troop warning is a single case in point. If we are to be able to use our own atomic weapons flexibly, we must know, with considerable exactness, where our own forces are, be able to warn them quickly and surely, and be able to move them very promptly from areas of danger. With large forces, it is patently impossible to do these things.



We have noted that only a relatively small proportion of combat soldiers do most of the fighting. *These* are the ones we want in the forward combat units. To identify them we have aptitude and reaction tests that discover basic skills and the capacity to learn. Courses such as basic airborne, ranger, and the Navy's underwater demolition team training determine the extent of motivation, courage and endurance. Of the three courses basic airborne is the least arduous, but it is rigorous enough to eliminate many undesirables and its graduates are remarkably well motivated towards the Army and the soldier's life. So too the Navy's UDT training turns out frogmen of great skill, courage and tenacity, through very arduous physical, mental and moral testing and the ruthless elimination of the less fit.

Employment of "combat sections"

I am trying now to develop a picture wherein perhaps three small groups (call them combat sections) each of about 50 selected men, can, in the forward edge of an atomic battle, combine to do the job of a battle group. These soldiers need not be attired in space suits and helmets. I would want them equipped with the best possible light communications and optical gear (with emphasis on night vision devices) that science can provide. Their weapons must be equally superior, and the section's equipment should include portable atomic and air-defense weapons—both of which appear to be in fairly certain prospect—and one or two short-range antitank weapons. Lightweight short-range detection and target acquisition equipment must be provided directly; heavier target acquisition means may be operated by support units in the rear, but it should be responsive to the combat section's requirements.

The 50-man combat section must be equally adaptable to transport by ground or air. Except for one or two reconnaissance craft, helicopters need not be organic to the section. But the helicopters furnished the section should be of the most advanced design, not of too many types nor too large, and tailored to carry men and weapons. The helicopters must contribute as necessary to mobility, security, target acquisition and the need for command and liaison.

During battle, combat sections may be resupplied by surface means when practicable, but helicopters, provided by support units in the rear, must always be ready to take over the job.

A supporting unit must provide ground transport when and as necessary, equipment and resupply, and do the other administrative and logistical chores necessary to allow the combat echelon to devote all its energy to fighting. Each combat section commands its own supporting units. To take care of the complicated equipment necessary to the combat section, the support section would have to be pretty fat. Here we see the antithesis to the current emphasis on "foxhole strength," for this proposal argues that in an atomic war forward battle echelons of the army must be small but elite in all respects; the support echelons may be as large as necessary to guarantee a high degree of back-up efficiency. For a battle group of about 1,500 we have substituted three combat sections of about 50 men, each supported by a logistical section of perhaps 100. Add to this a proportionate share of the other units in support of the combat sections and it may prove that no very great saving in manpower can be achieved. That, however, is not our aim. We seek simply to exploit to maximum effect what manpower strength we have.

When the situation permits, the vehicles of the combat section may remain with it in the forward combat area, but often this will be impossible. The unit must be prepared to live and fight on the basis of foot and air transport and air resupply.

Air cavalry, armored units, conventional artillery, and surface-to-surface and surface-to-air missile units should work in conjunction with the combat sections, which would constitute the basic combat structure. A division would comprise some combinations of these: 15 to 20 combat sections, a small armored unit, air cavalry, conventional artillery in generous numbers, missiles, and logistical support units. I deliberately (and thankfully) avoid the details of organization, on which subject argument always waxes bitter.

Use of air and armor

I use "air cavalry" to describe units whose mode of tactical employment will take maximum advantage of the unique mobility and flexibility of light aircraft. In this instance, the term encompasses organic aircraft which will be employed to provide, for the execution of the missions assigned these units, not only mobility for the relatively few riflemen and machine gunners, but also direct fire support, artillery and missile fire adjustment, command, communications, security, reconnaissance and supply. New developments in weapons will provide air cavalry with very destructive firepower, and these forces will locate many targets for the employment of surface-to-surface missiles. Fire-support helicopters may be armed with rockets and machine guns or (if we choose to develop them) multiple missiles armed with antitank, HE or even atomic warheads. Air cavalry can reconnoiter, disrupt, harass, and destroy. Later we will discuss more specific missions.

Armored units would be employed to the extent that conditions—particularly the circumstance of supply—would permit. There is little question of their usefulness, assuming that they and their trains can negotiate existing obstacles, but tank units too often can be effectively blocked, or starved for fuel and ammunition, by atomic blasts placed on defiles. To be sure, cargo helicopters can transport gasoline and ammunition, but armored units so supported must, like the infantry combat sections, achieve the virtue of smallness.

Now we can examine briefly what might be expected of these forces in battle.

Three "combat sections" of about 50 men (highly selected, expertly trained and conditioned, perfectly equipped) would, in the defensive, be expected to protect an area which nowadays would be assigned a battle group. I have no doubt they can do it with what science can produce in the shape of new light weapons and detection equipment, the back-up which may be given by combat support units to the rear, and the mobility which comes from smallness. A single helicopter company, as now organized, could move all three sections in one lift; to move the present-day battle group (without vehicles, and the battle group cannot operate without its vehicles) would require eight helicopter company lifts. To supply the three sections by helicopter would require only a small fraction of the supply lift demanded by the battle group.

Defensive tactics

Consider the problems of the defense of a small knob to which a current battle group would assign a platoon of 45 men. Only about five men of the proposed organization could be spared for the job.

Detection equipment should provide these five with the same warning of enemy attack a platoon might expect. Artillery fire, the major element of U. S. defensive strength in conventional combat, would be the same for each force. All the scatter-type antipersonnel mines that available transportation can deliver can be easily laid by five men. The presence, or absence, of the five will be difficult for the enemy to detect. These men may be easily maneuvered in the execution of the principles of mobile defense, or to permit the delivery of an atomic blast in defense of the over-all position. Presumably, *all* five will fight with skill and determination, whereas some of the 45 will contribute to their platoon leader nothing but logistical and morale problems and a headache. The five, by virtue of their training, will make fewer mistakes, and mistakes are what very frequently determine the outcome of a battle. All radios, detection devices and weapons of the five will work, because of the high degree of logistical support and maintenance made available; this will not be so for the platoon.

I'll grant that in some instances, these five high-quality soldiers will not be able to accomplish what 45 of lower-caliber can, but in as many actions they can do better. And it is comparatively easy to maneuver the five, control them, warn them—and supply them.

Missions of the arms

In defense, air cavalry units will contribute much by way of reconnaissance, the placement and support of outposts and listening posts, the protection of flanks, the surveillance of gaps, the direction of artillery and missile fire, antitank fire, and the delay of otherwise unopposed enemy thrusts. Small, light and mobile, air cavalry will serve as an ideal companion force to the infantry combat sections.

Artillery, since the combat sections will have no mortars, will have a more important role, or

rather the dual functions of mortars and artillery. The problem is not an insuperable one. For missile units no change in mission, but of course as missiles themselves become easier to handle flexibility and effectiveness will vastly increase. Artillery and missile units will require their own local security forces and detection gear.

Tank forces will be used to the extent that they can be supplied in the forward area. They will be enormously useful in counterattack and in antitank defense.

Antitank defense warrants special attention. In many instances, if the enemy's tanks can reach the battle area, so can ours, and a tank battle will ensue. But this will not always happen. When it does not, enemy tank units must be otherwise opposed.

Air cavalry helicopters armed with antitank missiles should be effective, and air cavalry demolition teams will be able to impose delay. Each combat section will have very few portable antitank weapons, and those probably of short range. Artillery, especially 155mm and larger, will have a deterent effect, and so will fighter-bomber attacks. Atomic weapons may be used when they prove suitable, and in many circumstances can cut off enemy tanks from their source of supply.

Antitank tactics, when our own tanks are not available in the forward area, will include harassment, delay, and the infliction of as much destruction as possible. Shallow penetrations by enemy tanks would have to be accepted, but their effect should be far less damaging than in current conditions because of the lack of soft targets in the forward area and our ability to supply our forward elements by helicopter. Combat sections, because they offer small targets and are elusive, should not suffer major damage by tank attack even though they cannot block tank passage. By the time enemy tanks reach the areas occupied by our combat support units our own tanks should be able to engage them, on the premise that if artillery and missile units can get there, certainly our own tanks can too.

We'll move now to a stickier problem: the offensive.

Offensive tactics

Offensive tactics will include the moving of battle sections forward to selected points within the area occupied by the enemy, points selected to enable the sections to inflict the greatest damage upon him. Some battle sections might move by foot, carrying only a portion of their equipment, the rest to be delivered later by helicopter. A combination of foot movement and helicopter lift might be employed, the lift simply to shuttle attacking sections over major obstacles. Occasionally, motor movement might be used. Some sections may be flown by helicopters directly to their objectives.

Normally, atomic weapons would open the way for these penetrations. Helicopters offer the best means for exploiting gaps thus opened.

In considering the attack, we do not need to equate the five men of the new type force to the 45 men of a conventional platoon. In the first place, the mobility and ease of supply of the combat sections permit far greater use of the bypass. When enemy units must be dislodged from occupied terrain without recourse to an atomic blast—and of course this must be done frequently —mobility (again) will permit a concentration of force. So that where now we would commit perhaps two companies of 300 relatively unskilled troops, many of whom would not pull their weight, we might use two combat sections of 100 highly skilled soldiers. Missile and artillery support, a major part of total offensive power, may be presumed to be the same as for conventional forces. You may point out that two combat sections would represent a larger proportion of a new type division than would two companies of an old type. So they would, but here we should take into proper account the factors of conditioning and training, and the ways by which the work of the combat sections of the new force might be eased through the higher degree of support (with special reference to helicopter troop lift and helicopter resupply).

Air cavalry will contribute very greatly to the impetus of the attack, through raids, seizing critical terrain in advance of other forces, reconnaissance, flank protection, and harassing and delaying enemy forces on the move, be they retreating elements or reserves.

Several times we have mentioned great dependence on the helicopter, whose vulnerability often is questioned. Let's first acknowledge that any extensive utilization in combat of light aircraft must inevitably result in the loss of a large number of them. We must get used to the idea. In another war, which I believe can be fought with maximum efficiency only by a large-scale employ-

ment of light aircraft, the loss of one or several should be no more noteworthy than the loss of an equivalent number of tanks or carriers.

Vulnerability not always understood

Be that as it may, I believe there is much misapprehension as to vulnerability. Our experience here is not very broad—although during World War II and Korea there were many occasions in which our observation aircraft were shot at. In the course of 35,000 operational missions into enemy-held areas, the French in Africa in their first few years of experience lost only six helicopters, out of 115 actually hit by small-arms fire. It is safe to say that even light aircraft move faster than you think; they pose a special problem (as respects quick elevation and traverse) to the machine gun whose habitual target is on the ground; the range to a small target in the air is very difficult to judge; by flying in the nap of the earth's surface helicopters may keep close to cover behind which they may drop when engaged; again by flying low, they greatly minimize the number of enemy weapons which may be brought against them, and escape detection by enemy radar. What's more, the aircraft we're talking about can shoot back, and that makes a difference. Through adequate development of flight instruments and navigation media we can make these aircraft capable of flying at low altitudes at night and in bad weather; many missions may be deliberately flown under those conditions, thus greatly reducing vulnerability.

Perhaps the most important point regarding diminishing vulnerability is this: it can be reduced to an acceptable degree through the application of proper *tactics* and *techniques*. After all, the infantryman, as he slogs onto the objective, has only the thinness of his shirt to ward off enemy bullets; he reaches his objective not through any ability to absorb damage, but through application of proper tactics. So too the helicopter can arrive at its objective. Parenthetically, it is interesting to observe that in Korea 84 per cent of all U. S. casualties were inflicted by shell fragments. Troops borne in low-flying light aircraft should be relatively safe from injury from artillery, missile and mortar fire.

Tanks will participate in the attack to the extent that they can be brought up and supported. Over ideal terrain tanks may constitute the major strength of the attack, the combat sections aiding their progress in every way possible.

The function of artillery and missile units will be normal, except that a premium is placed on range. We must contemplate lifting guns and launchers over obstacles by heavier type helicopters, but here ammunition resupply will not be easy. Air cavalry can supply some fire support, in light and heavy calibers, from missile-firing helicopters. Fighter-bombers may be able to supply a great deal of such fire support.

These forces should be exceptionally efficient in damaging and delaying a stronger enemy during the course of a general withdrawal by us. Because obstacles may be easily surmounted, infantry combat sections and air cavalry can set off all demolitions and mine the roads behind them—an enormous advantage. Because of their mobility, harassing and ambushing forces that can adjust artillery and missile fire can be left in place long after the normal time for withdrawal. Indeed, the worth of this structure is that it can impose maximum damage on the enemy, at the expense of little more than giving up a certain amount of terrain. This leads us to speculate on its use as a basic tactic for initially opposing larger attacking forces. Of course, as a tactic it is anything but new.

WELL, there it is. An exercise of this sort is never very convincing unless the author is thoroughly convinced, and I confess there are some shady areas I'm not sold on. However, I am pretty sure the land battle of an atomic war cannot be won except by forces realistically organized, equipped and trained for the purpose. Maybe you *can* convert a three-masted schooner into an aircraft carrier, but it wouldn't be a good one.

Program Packages

The budget as a vehicle for decision making

By Colonel CHESTER E. GLASSEN and Major JAMES R. LOOME

● "Program packages," "program elements," "cost and effectiveness," "alternative proposals," "modules and spectrum of conflict," "Central War" and "General Purpose Forces"—these are but a few of the terms and phrases now being widely heard in the Pentagon. They are a part of the fallout from the somewhat explosive effort being generated within the Department of Defense to establish a new program in budget formulation. The development of initial procedures, definitions, structure, patterns and other components was expedited during April, May and June in order that they would be available for developing the budget for Fiscal Year 1963. Preparation of the 1963 budget gets under way in earnest during July, and will continue on through June 1962.

The new model being brought off the "system" assembly line bears a number of interesting characteristics: it stresses military missions, combat units and weapons systems; it calls for program and cost projections over a period of from five to ten years; and it attempts to relate costs to effectiveness in performance of missions, in the consideration of alternative courses of action, and in the selection of weapons. If the new system catches hold with the customers it will cause changes in current military scheduling procedures and in the timing and methods of planning and budgeting as well. It may also affect existing staff relationships and organization.

Most of the ideas and concepts being employed are not new. However, what are new and which merit attention are the facts that they are being brought together into a formal system and that they are to be actually used in formulating the next budget of the services.

The construction of a program or budget system resembles the building of a ship, where the keel is laid and frames are attached so as to form a firm structure. On this structure planks are fastened, hopefully in a watertight fashion, to create a hull which will float. Similarly, in developing a program and budget system a structure must be prepared to which sound and understandable procedures are attached, in order to assure a useful device for collecting and presenting information. The end purpose is to provide a base of knowledge for making decisions.

In the current effort by the Department of

Defense the keel might be likened to the underlying concept of viewing the annual budget action as but one step in applying resources in accomplishing a set of long-range plans and programs; that is, looking at all the costs of a program which may be required over the long h l. It is another attempt to depart from the year-to-year approach which characterizes military budgeting.

The structure of the program being developed —that is, the classification system for arranging and displaying information—uses "frames" similar to those employed in military planning. The main frames are the missions which must be performed by military force groups in carrying out national security objectives and defense plans.

Nine program packages

The newly developed Department of Defense structure consists of many "program elements" assembled within ten "program packages." Table I lists the program packages along with the Army staff agencies which have been assigned responsibility for their preparation. A program element is "an integrated activity, a combination of men, equipment, and installations, whose effectiveness can be related to our national security policy objectives." Program elements include divisions, regiments, battalions, missile and aircraft squadrons and ships, along with a series of supporting forces and activities. These elements are grouped on the basis of having common missions or because they mutually contribute to the accomplishment of identifiable tasks. For example, all bomber and missile forces are brought together in the package "Central War Offensive Forces." Similarly, all air-defense elements are in the package "Central War Defensive Forces." The remainder of combat forces are grouped under "General Purposes Forces." These forces will be engaged in any type of conflict other than that which involves solely an intercontinental nuclear exchange.

Other packages include activities such as the reserve components forces, service-wide support and research and development which are not readily identified with major missions and programs. Essentially, these comprise the Continental base establishment which supports forces now committed and provide a mobilization capability.

Costs related to effectiveness

The "total" costs of program elements for each of the years under consideration must be determined and then associated with the element's effectiveness in contributing to mission accomplishment. Total costs include expenditures for research and development, military personnel, operations and maintenance, procurement of

Table I.—PROGRAM PACKAGES

I. Central War Offensive Forces
Program elements are: B-52 wings, tankers, ICBMs, Polaris submarines; weapons with a long-range capability.

II. Central War Defensive Forces
Army Staff Agency: Deputy C/S for Operations
Continental Air Defense forces of the Army, Air Force and Navy, including surveillance and warning systems.

III. General Purpose Forces
Army Staff Agency: Deputy C/S for Operations
Deployed forces under Unified Commands: divisions, brigades, groups, carriers, destroyers, marine forces, tactical air, and similar forces.

IV. Sea and Airlift Forces
Troop carrier wings, MATS and MSTS.

V. Reserve and National Guard Forces
Army Staff Agency: Assistant Chief of Staff for Reserve Components
All reserve component elements of the services.

VI. Research & Development (including Space)
Army Staff Agency: Chief of Research & Development
Essentially all research and development activities, except for those projects the cost of which can be clearly identified with other program elements.

VII. Service-Wide Support
Army Staff Agency: C/S Programs & Analysis Group
CONUS basic establishments for training and logistics.

VIII. Classified Projects
Army Staff Agency: Comptroller of Army

IX. Department of Defense
DASA, retired pay, and miscellaneous DOD projects.

equipment, construction, and any other which can be logically attributed to the program element. This method is an extension of the "weapons systems" approach which has been used with some success in the large missile programs such as Atlas, Minuteman, and Polaris. In the case of these essentially single-purpose, high-cost but low-density systems, the method poses relatively little difficulty.

With all other military forces the problem is not so simple. There is an almost infinite variety of national security plans and force compositions which may be considered in arriving at a readiness posture for the United States and its allies. In this area of military planning and scheduling, the costs of the missions, deployments, and the major force groups must be given first consideration because decisions on these matters are of primary concern. After that, a look at the hardware and other components is in order.

Furthermore, the capabilities and costs of individual combat units brought together into major force groupings such as a field army, a carrier strike force, or a tactical air force supporting ground operations, will differ from the capabilities and costs of the individual combat units looked at by themselves. Accordingly, the design of the program's structure must provide for identifying the major missions and these force groups, so that the essential decisions can be ascertained on deployments and courses of military strategy and tactics.

Another practical problem in the design of the program's structure is the avoidance of too much division. Too many subsections may result in excessive detail and in turn make it difficult to get to the heart of the important matters. There is an unfortunate tendency in the Pentagon, and perhaps in large public and private agencies as well, to assemble a great volume of every kind of information in order to answer any question which might arise. Electronic data processing systems (ADPS) have been brought in to help meet this avalanche of detail but in many instances they create more detail. Furthermore, "machines are morons." They perform no better than the quality of the information inserted: they cannot think or make important top-level decisions. The formulation phase of planning, scheduling and budgeting requires only reliable, order-of-magnitude, data estimates. At this stage, the objective is to trim the pie and not cut it into little pieces. Confusing operational detail with planning detail unnecessarily complicates the problem. There is at once too much information and yet not enough of the right kind, or at least it is not organized in a manner suitable for planning and scheduling decisions. At present the new structure of the Defense Department has about 500 program elements, of which approximately one-third pertain to Army activities. Since the initial submission of costs is to cover six years and will require about 20 pages per program element, this first product will be somewhat weighty indeed and perhaps a little difficult even for an electronic computer to digest. However, all these are problems of detail. Plans have already been made for refining the procedures over the next eight to nine months. From a timing aspect, the defense program system envisions two phases: a program phase extending from June through September, followed by the traditional budgeting phase from September through December. The second phase culminates with the submission in January of the President's budget to the Congress.

During the program phase the military departments will submit program proposals in the package-element form for review, analysis and decision by the Secretary of Defense. His program decisions will then be converted during the second phase into service budgets. Basic guidance for the departmental program proposal stems from a new statement of basic national security policies. Using a ten-year force structure (FY 1961-70), developed in response to the new security policies and the FY 1962 budget as points of departure, the program proposals will indicate the resources needed to achieve the objectives and the desired state of readiness. The Secretary of Defense has indicated great interest in the presentation of alternatives so that his decisions need not be limited to "yes" or "no" on a particular proposal but can be made by selection from among several possible courses of action.

Management moves the programs

No development ever springs from out of the blue. Each has a pattern and a history of growth, the knowledge of which aids in understanding the present. A mission and system approach to scheduling and budgeting is logically the next step in the chain of events which have been occurring in management over the past 12 years. Since World War II the Department of the Army, and the other military services, have devoted a great deal of attention and effort to improving management. The goal has been to develop procedural means which will facilitate effective command and management in an atmosphere of rapidly changing world conditions and continuing challenges involving military power.

Although progress in military management does not possess the spectacular news value of advances in missiles, rockets and ventures into space, it has been significant and important. As a matter of fact, the transformation of technological ideas into fighting military forces depends completely upon the existence of an adequate

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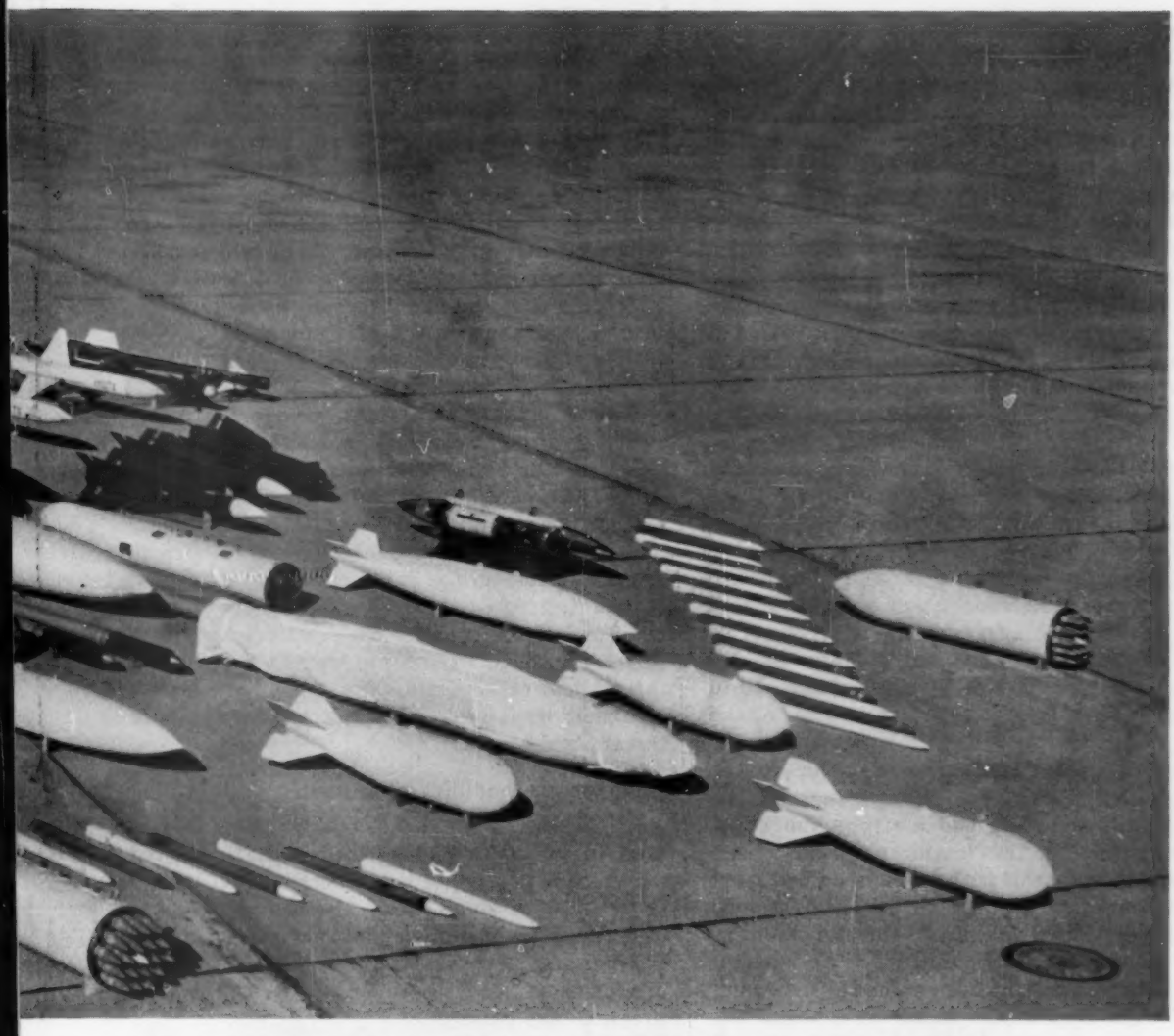

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management capability. Of course, as in missile development, progress in the field of military management has not been without its pitfalls; some of management's test vehicles have blown up on the pad, others have exploded shortly after lift-off. New methods have frequently disturbed established organizational arrangements and created friction. Critics have been present in abundance; committees to study reorganization, management, excessive reports, and the possible users of ADPS, have been established with the regularity of the seasons. However, criticism and innovation act as prods toward changes, many of which are genuine improvements.

Budgets that reveal performances

In 1949 the Congress, following recommendations of the Hoover Commission, amended the National Defense Act to require the use of a "performance" budget. This call for a rebuilding of the "accounts" structure reflected the desire of the Congress for information on the costs of the major defense programs rather than the price of commodities, services, and salaries of employees—the type of data then being supplied in the annual budgets. By 1952 the revision of the budget structures had been completed and the first performance budget was presented to the Appropriations Committees of the Congress. The design of the structure had a strong functional character—that is, the "major programs" were groupings of activities performed in carrying out a job. These prime functions are required to field and support a military force. One top military official approved the structure with the reservation that it was not to cause a change in organization. This wishfulness failed to consider the fact that the manner in which information is assembled and presented inevitably has a strong impact on staff and field organization. Over the years since 1952 non-tactical headquarters from the Department down to the installation have taken on a more functional pattern, following the management structure.

In 1954, General George H. Decker, then Comptroller of the Army, recognized that the functional structure still did not present the cost story on the more fundamental military programs—the missions which are directly evolved from the national security plans. He initiated a study into the feasibility of putting costs together in mission form. However, five years were to pass before real results would be achieved in this direction. In the intervening time, there occurred refinements in accounting, reporting and organization. Perhaps most important was the spread of the knowledge of scheduling and budgeting performance style.

In 1958, General Maxwell D. Taylor, then Chief of Staff, again brought up the subject. His proposal was aimed at having a more discriminating structure for reviewing and fixing the costs of the priority requisites of a national military program. His "packages" were mission-oriented force groups: for example, atomic deterrent forces, Continental air-defense forces, deployed forces, strategic reserve forces, and the air and sea forces necessary for strategic mobility and to maintain air and sea lines of communication. It is evident that the new program package structure of the Department of Defense is directly related to General Taylor's proposal—at least in the "package" structure.

Several estimates of costs were prepared on versions of the Taylor approach and presented to Congress. It evoked considerable interest and added further impetus to the trend toward the mission concept of scheduling. In 1959 and again in 1960, Representative George Mahon, Chairman of the Armed Services Subcommittee of the House Appropriations Committee, requested the Department of Defense to develop a practical method of relating missions to costs; to identify the military threats and targets and show the forces, including their total costs, required to counter such threats and targets.

Long-range scheduling of missions

In the fall of 1960, General Decker, shortly after his appointment as Chief of Staff, spurred increased emphasis on long-range scheduling and on the mission approach as an alternative means of reviewing service plans and requirements. By the end of the year work was completed on the first phase of the Department of the Army's mission and task pattern.

The Army's mission and task pattern coincides in concept with the Department of Defense program of package structure. It was used by the team which developed the package system for the Department of Defense and the Army, and as a result many of the ideas of the Army pattern were incorporated in the new package structure. There still remain, however, several differences in detail, principally in the matter of separating out and identifying the missions of the General Purpose Forces. Table II shows the major missions of the armed forces as viewed from the latest version of the Army's mission and task pattern. In analyzing the many missions of the services, it becomes apparent that they can be combined under two major classifications. The first is the Strategic Commitment of Combat Forces, the broad spectrum of military missions springing from the basic objective of all military forces expressed in the Preamble to the Constitution: to provide for the common defense. The second is the service-wide base, the basic service

establishment which provides essential training, logistics, management and administrative support, and which for the most part does not vary appreciably or directly with the current size of the military forces. There might be still a third grouping of "other missions" which would include a wide variety of things that the Army and the other services are called upon to do. These range from operating the Panama Canal to running a national intelligence network. These missions and tasks also stem from national objectives, but they are not necessarily limited to providing for the common defense. They consume, for the Army, something less than five per cent of its resources, and accordingly can be included as an undistributable portion of the service-wide base.

Against the major missions shown in Table II, there is provision for the assignment of expenditures in terms of operating costs, capital investment, and for setting forth the total number of military personnel being employed in conducting each mission. Within the areas of these broad missions are found the specific missions assigned by the Joint Chiefs of Staff to the heads of unified commands. Accordingly, the mission and task pattern has the advantage of paralleling, to a very large degree, the organizational elements which will be responsible for fighting: the unified commands.

These broad missions may in turn be divided into a number of important subordinate tasks to which major force groupings have been assigned. For example, for the Army in Europe there could be identified five specific missions and tasks. One of these, the defense of Central Europe, is the military job assigned to Seventh Army. An-

Table II. MISSION-FORCE-COST SUMMARY

(Personnel in Thousands)

Mission and Unified Command	(Costs in Millions of Dollars by Fiscal Year) Military Strength '62 '63 '64 '65 '66	-Annual Operation '62 '63 '64 '65 '66	Annual Investment '62 '63 '64 '65 '66
A. Strategic Commitment of Combat Forces			
I. Strategic Counter-Offensive Forces (CINCSAC)			
II. Continental Air Defense (CINCNORAD)			
III. Defense in Europe (CINCEUR)			
IV. Defense in Middle East (CINCNELM)			
V. Defense in Atlantic (CINCLANT)			
VI. Defense in Caribbean (CINCARIB)			
VII. Defense in Alaska (CINCAL)			
VIII. Defense in Pacific (CINCPAC)			
IX. Strategic Reserve Forces (STRAC-TAC-FMF, etc.)			
B. Service-Wide Support			
I. Training Base			
II. Logistical Base			
III. Management Base			
IV. Research & Development Base			
V. Mobilization Base			
VI. Intelligence			
VII. Other Activities			

other is the mission of occupying and protecting the U.S. sector of Berlin, which is being done by Berlin Command. In Southern Europe there is the Army's part in Land Forces South. These three combat missions, together with the theater support provided by Communications Zone agencies and by the command and control rendered by Headquarters USAREUR, suggest a subordinate classification of a mission program structure which permits an examination and analysis at a significant level. Such a structure is shown on Table III.

Types of missions and tasks identified, we can assess the current capability of these force groups to accomplish their missions. Are they capable of doing the job assigned? Can they do it more effectively with another type of organization?

What do the force groups need in terms of personnel, modern equipment, training and facilities to bring them to the degree of readiness required by the basic plans and status? What period of time would be reasonable for effecting improvements? Such questions lead to an identification of the program actions which are to be taken, the cost implications, and the time phasing for accomplishment. It is important to note here that under the mission approach the term "costs" implies all costs involved, both operating and investment. If the program action is approved at the level of costs proposed, then the stated budget amounts filter into each of the various appropriations used for funding. If this scheme can be followed, then it should to a large degree close the gaps between program approved, resources required, and resources available to carry out the intended actions. The current functional approach has from time to time permitted this gap to exist.

It is essential that we clearly distinguish those data requirements that are needed for planning, for scheduling, and for budgeting. Obviously, these phases interact with each other, but the data requirements are different. If too much detail is brought into the preliminary planning and scheduling phases, then a condition can result of being unable to see the forest for the trees. Such confusion might be created by jumping from broad statements of mission to an examination of weapons systems or individual combat units. Certainly, this should be one of the areas of careful examination during the refinement research which will be undertaken during the summer and fall on the new structure program package.

The time is right, the knowledge exists, and the need is present for instituting the mission approach to scheduling and budgeting. If carefully developed and implemented, this approach could prove a most important aid in determining the national security program. It may cause some changes in organizational arrangements, especially at the higher headquarters. However, one of its principal virtues is that it will require these large headquarters—for example, departmental and higher—to concentrate attention on combat force capability and combat missions rather than upon the subordinate functions required to achieve mission performance.

Table III. MISSION-FORCE-COST SUMMARY

Mission and Force	Military Strength '62 '63 '64 '65 '66	Annual Operation '62 '63 '64 '65 '66	Annual Investment '62 '63 '64 '65 '66
III. Defense in Europe — U.S. Army Europe			
a. Defense of Central Europe — U.S. Seventh Army			
b. Occupation and Protection of Berlin — The Berlin Command			
c. Atomic Support of NATO Land Forces — Southern European Task Force			
d. Theater Support — Communications Zone			
e. Command and Control — Headquarters, USAREUR			

REAR-AREA SECURITY—a job for MPs

Major KEITH L. MONROE

● Is rear-area security a tactical or an administrative function? Which arm or service can best plan, direct, and monitor its operations? Which headquarters in the command chain should supervise it? How can it be organized, coordinated, and controlled?

History can answer some but not all of these questions. For example, until November 1944, U. S. First Army had been fighting in liberated territory whose people were relatively friendly. However, the advance into Germany raised questions on the future conduct of rear-area matters heretofore considered routine.

The need for protecting service installations located along the lines of communication would become greater. Administrative support functions would be vulnerable to hostile action by local Germans.

Today's commander must decide whether the need for dispersing his administrative support elements exceeds that of reducing reaction time. As service installations become more remunerative targets for guerrillas, saboteurs, infiltrators, raiding parties, and nuclear weapons, the time-and-space factors for establishing a logistical plant at any given distance from the combat area diminish in importance.

This lesson was driven home during the Battle of the Bulge. The importance of prior planning for rear-area security in blunting the counteroffensive may never be fully known. It is significant, however, that First Army had a plan that when put into effect *did* slow the enemy drive. It confused and hindered the enemy by providing measures for gathering and transmitting information of his movements, investigating reports of his penetrations into the army's service area, apprehending enemy dressed in our uniforms, interfering with his reconnaissance parties, establishing check points, and controlling civilian movement.

Many features of First Army's plan are recognizable in our current concept of rear-area security. Its purpose was to secure and defend rear areas. Other aspects of the original scheme, still applicable, dealt with planning future operations, integrating local defense into the over-all plan, designating combat units as reserve forces, establishing a fixed control center, and differentiating between missions assigned rear-area security forces and those assigned combat troops.

During this same period there was also a plan for controlling damage resulting from V-bomb attacks. Although hastily contrived, these early control measures proved fairly adequate. Even so, those portions of the plan, tested and proved sound in battle, such as fixing responsibility for damage control and providing control services on an area basis, have been retained to some extent.

From this short review we can see how our current systems of rear-area security and area damage control evolved. (Throughout our discussion, "security" will mean security of the rear area; "damage control" will mean control of damage in areas.)

Who secures the rear area?

In 1944 First Army designated a tank destroyer group as the central agency (now called rear-area security control center) for controlling and coordinating the various sub-areas integrated into and comprising the entire army service area's security. This center was controlled by the army's provost marshal, who monitored the activities of the various sub-area "defense" officers and maintained radio communication with each. A similar scheme was used in Third Army except that an armor group headquarters was used instead of a TD unit.

The TD group headquarters was made the control agency because the need for tank destroyers had somewhat moderated. However, the additional benefit of the communications capability of such a group was probably also considered. Again, such a group headquarters had the tactical know-how to direct strike forces allotted to security.

Of all the army's staff section chiefs, why was the provost marshal selected as security supervisor (controller)? Surely one reason was his familiarity with

Taking a load off front-line troops, military policemen can assume the multi-faceted chore of prisoner-of-war handling. With hundreds of thousands to control, by end of World War II POW responsibility had loomed large in ETO logistics picture

the army service area—or at least his knowledge of the military police under his control. Probably some attention was given the fact that his MPs were able to move and communicate. Their capacity for observing and reporting was an important, perhaps indispensable, factor in the feasibility of First Army's plan.

Apart from these advantages, while MP units could to a limited degree engage and fix hostile elements, their capacity to do so was greater than that of other service type units. Their armored cars and jeep-mounted weapons provided firepower superior to that in other administrative support elements.

Doctrine has not changed

As we have noted, there has been little alteration in the basic concepts and requirements necessary to build an effective organization for rear-area security. However, certain changes resulting from new conceptions have been instituted. Examples of such revisions are the administrative support operations center (ADSOC) in the communications zone and a controller of rear-area security on the army's special staff. Nevertheless, in the main, our doctrine of security control hasn't changed since 1944.

The question is, do the modifications we have made contribute to the effectiveness of this security? The provost marshal is no longer responsible for implementing the security plan, nor does he now act as rear-area security controller. Actually, at corps and army, the specific duty of the security controller is not pinpointed.

At division (trains or support group commander) and in the communications zone (director of security) control responsibility is more firmly fixed. Notwithstanding the apparent awareness in division and ComZ, at the several subordinate headquarters security responsibility is vested in dissimilar agencies having varied interests.

To further confound matters, corps and army have no rear-area security control center. The establishment of this center is based upon need and the availability of troops and equipment.

Although the provost marshal has been removed from the security control structure, it is interesting to note that as late as 1956, the provost marshal was security "commander" for Seventh Army. (Also both of Seventh Army's corps assigned the security mission to their provost marshals.) He was also made responsible for damage control measures.

Military police ideally suited

Historic as well as recent alliance of the provost marshal and security duties pose two questions whose answers may solve contemporary security problems. Why shouldn't the provost marshal (at all headquarters) act as security controller? Why shouldn't the MP unit structure (within each command) form the framework or the command and troop nucleus for this function?

In general, military police groups and battalions can conduct effective surveillance and transmit information rapidly; they are mobile and have adequate effective firepower. All these functions are so vital to the success of security missions. Military police units as currently constituted (controlled for operations by the command's provost marshal) are better able to meet these requirements than other troops present in an area of operations.

Of course, in certain instances (to assure effective firepower and mobility of combat elements) it may be necessary to augment MP troop units and equipment, but to lesser degrees than would be required for other units disposed rearward.

Planners in administrative units must bear one principle in mind: when administrative troops are assigned security missions, their primary support functions must be curtailed during the time they prepare for or perform security assignments. A comparison of objectives reveals that MPs are more fit for security type duties than are other administrative support troops. In fact, the secondary mission of many military police units is "to fight as infantry when required."

When his provost marshal has been appointed security controller, the army commander has one of two choices for solving his security problem. He can place operational responsibility for security in, or as an adjunct to, the provost marshal section. Control of sub-area rear areas (SARA) in the army service area would then be delegated to SARA security controllers (SARASC) who would be military police group or battalion commanders.

Such a method requires no change in the general concept of security as it now stands, with certain exceptions. When the security plan goes into effect, the control of SARA and designated portions of administrative support units devolves on MP unit commanders (SARASC) rather than on commanders of other service units. Also, SARA geographical limits would conform to the boundaries of MP unit areas of responsibility. Finally, the alternate RASCC usually established at the army's rear command post would be supplemented by another alternate RASCC organized at a military police group headquarters.

Benefits of MP use

Proponents of this plan must remember, however, that the security force would, as now, include combat forces designated for security operations. Of necessity, the provost marshal would also control numerous troops detailed from administrative support elements. In effect, the functions of these various units would produce a force too unwieldy for a provost marshal—or any other special staff officer—to handle. Because the bugbear of mixing tactical and administrative concepts is ever with us, a separation or delineation of effort is called for.

In this light, then, the security force should be organized separately, and committed piecemeal or wholly in the various sub-areas as needed. Meanwhile, the sub-area controller must do with those administrative support troops allotted to him. He has no control—except to request its assistance—over the security force which remains under its commander and is controlled operationally by RASCC. Practicable or not, current security operations are visualized as we have described them.

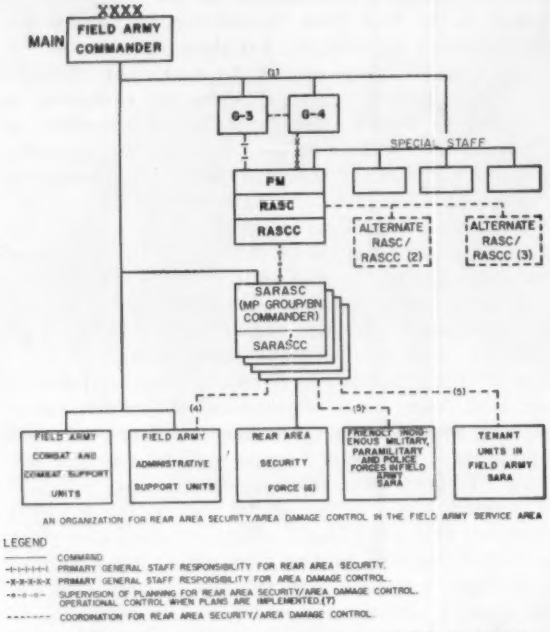
A second method of providing better coordinated security measures incorporates all the changes mentioned in the first plan, in addition to placing the responsibility for carrying out these missions on the military police troops *per se*. To implement this concept, an augmentation in MP units and equipment is required to insure effective firepower, mobility of command elements, and increased combat strength.

While adoption of this method would demand increased military police strength on the field army's troop list, an appreciable over-all reduction in troops would result. Among other causes of this reduction amalgamation of the rear security force would eliminate unnecessary overhead and control troops (an MP group headquarters can handle six battalions with facility). Additional benefits accruing through adoption of this plan include: strengthening of command and staff lines; unity of command and effort; homogeneous organization (including types of units and equipment); release of combat support and administrative support units from security duties; reduction in reaction time; better traffic control for a widely dispersed field army; more effective control over other activities peculiar to the rear area (black market operations, pilferage, and the like); more effective enforcement of law and order and maintenance of discipline in a widely dispersed field army; and greater inherent flexibility.

Special forces in rear areas

In "Life Lines of Survival" [ARMY, May 1960], Major David D. Field describes other benefits accruing from the increased use of military police in rear areas, and contends that a separate force should be organized and trained for rear-area security tasks. Since the Military Police Corps already has missions related directly to the performance of these duties,

Rear area security is more than a job for the combat-ready infantry soldier—he should be a trained policeman and it's here that the military law enforcement man stands out. For even the most innocent appearing refugee may turn out to be a counter-intelligence agent, saboteur, messenger, or everyday garden variety of "slicky-boy" supplies thief


XXXX
MAIN
FIELD ARMY COMMANDER
(1)
G-3
G-4
SPECIAL STAFF
PM
RASC
RASCC
ALTERNATE RASC/ RASCC (2)
ALTERNATE RASC/ RASCC (3)
SARASC (MP GROUP/BN COMMANDER)
SARASCC
(4)
(5)
(5)
FIELD ARMY COMBAT AND COMBAT SUPPORT UNITS
FIELD ARMY ADMINISTRATIVE SUPPORT UNITS
REAR AREA SECURITY FORCE (6)
FRIENDLY INDIGENOUS MILITARY, PARAMILITARY AND POLICE FORCES INFIELD ARMY SARA
TENANT UNITS IN FIELD ARMY SARA
AN ORGANIZATION FOR REAR AREA SECURITY/AREA DAMAGE CONTROL IN THE FIELD ARMY SERVICE AREA
LEGEND
COMMAND
PRIMARY GENERAL STAFF RESPONSIBILITY FOR REAR AREA SECURITY.
PRIMARY GENERAL STAFF RESPONSIBILITY FOR AREA DAMAGE CONTROL.
SUPERVISION OF PLANNING FOR REAR AREA SECURITY/AREA DAMAGE CONTROL. OPERATIONAL CONTROL WHEN PLANS ARE IMPLEMENTED.(7)
COORDINATION FOR REAR AREA SECURITY/AREA DAMAGE CONTROL.

Organization for quick response keynotes MP capability

he recommends the incorporation of specialized units or troops into existing MP unit structures to provide a greater security capability.

He draws an apt comparison between the force required and the Constabulary which was stationed in Germany after World War II. More important, Major Field recognizes the need for well-trained, motivated, high-type soldiers who "would take pride in being members of an aggressive and highly skilled force engaged in a vital task." (In this connection, shouldn't "rear" be deleted from "rear-area security control" and "rear-area damage control"? "Rear" implies numerous apparent connotations, and a soldier could hardly be proud of being a member of a "rear area security force.") He emphasizes the point that while these troops might have such duties, we should take care to dispel the notion that they are merely guards or escort troops.

From examination, our second method (supported by Major Field's article) for providing adequate security, appears to be best suited for adoption. It satisfies the needs for the composition of an effective security force within a feasible operational structure.

Of course, detailing armored cavalry units and mechanized battle groups to security missions would solve many of the problems we have examined. However, even though provided for on the field army's troop list, these units were not intended for rear-area fighting, but for tactical employment in the vicinity of the forward edge of the battle area. In the rear, when not engaged against enemy-initiated resistance, they do not assist in traffic control, handling refugees, or maintaining law and order. On the other hand, a constabulary type force when not employed tactically would be able to assist in normal military police functions. The result would be a versatile force, under a single commander, directed by one source, and tailored to meet numerous tactical and non-tactical situations arising in the rear.

Diversion of combat troops

Committing armor and infantry units to the rear area security draws on the strength of the combat force and diverts combat-trained soldiers from front-line units. This offers no solution.

Recently, in an attempt to resolve the rear-area dilemma, a Seventh Army study had the objective of determining which of the service and combat support elements in the army's service area was most able to assume responsibility for security. It was determined that not all such units could meet certain of the established demands.

Seventh Army's study maintained that the normal dispersion of military police through the army's service area, with their existing communications net and continuous patrols on main supply routes, made them ideal for the secondary mission of rear-area surveillance. It was also found that Seventh Army's MP units possessed, in varying degree, the wherewithal to satisfy the essentials of mobility, firepower, and communications and control.

Bolstering military police troop and equipment lists could increase these means to the extent desired. Without their augmentation, the assignment to military police of the security mission is unfeasible. According to a letter in 1956 from the Seventh Army commander to The Provost Marshal General, "One weakness in assigning this mission to the Provost Marshal, however, was the fact that his forces would be so dispersed that only relatively small combat elements could be brought into action."

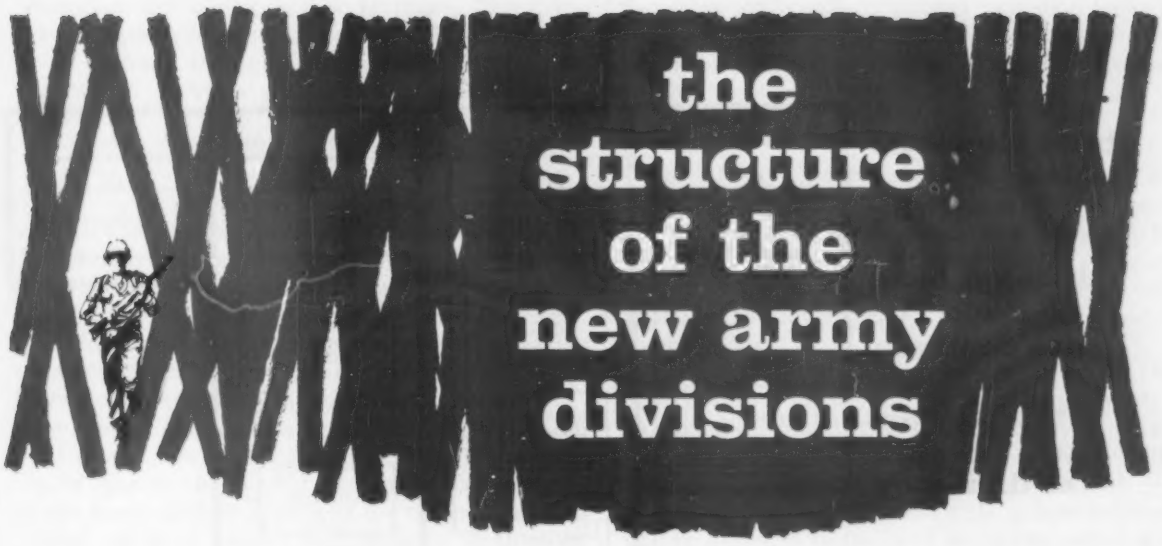
Strengthening MP units would obviate the necessity of requiring other service units to furnish troops for employment in the rear. In turn, service unit commanders would be able to concentrate on their own local security and their primary tasks of administrative support.

Organization for damage control

We have said that the provost marshal should also be responsible for area damage control. The same surveillance troops, communications net and organizational structure are suited to damage control. For implementation, each service in the rear area would be assigned an additional mission of equipping and training damage control teams—each team to be available according to the damage control plan and upon call of the provost marshal.

Current methods of insuring damage control by fixing responsibilities, centralizing control, and requiring area coverage would still apply. Damage control measures can be superimposed without overloading the security framework. First, however, a firm foundation must be approved and constructed for rear-area security.

Placed in a proper operational environment and allotted sufficient resources, military police can handle rear-area security and area damage control missions. These missions are growing ever more important and now are secondary assignments to a conglomeration of arms and services.



the structure of the new army divisions

By Lt. Col. WILLIAM H. ZIERDT, JR.

On a common base mixes of infantry and armor battalions can be added to provide airborne, armor, infantry and mechanized divisions

● "I am directing the Secretary of Defense to undertake a complete reorganization and modernization of the Army's divisional structure, to increase its non-nuclear firepower, to improve its tactical mobility in any environment, to insure its flexibility to meet any direct or indirect threat, to facilitate its coordination with our major allies, and to provide modern mechanized divisions in Europe and new airborne brigades in both the Pacific and Europe." So spoke our Commander in Chief in a special budget message delivered to Congress on 25 May. He went on to say: "I am asking the Congress for an additional 100 million dollars to begin the procurement task necessary to re-equip this new Army structure with the most modern material. New helicopters, new armored personnel carriers and new howitzers, for example, must be obtained now. These funds will be added to those already requested or reprogrammed from other sources."

After this address a press conference was held at the Pentagon, during which some of the details of the new division concept were spelled out. Active Army divisions are scheduled to begin reorganization during the calendar year 1962. Divisions of the reserve components (Army National Guard and Army Reserve) will commence this transition also during 1962, but according to current plans the time factor for completion will be stretched out over a longer period. It might be well to point out that during the past the reserve components completed similar transitions far ahead of schedule, and they will probably do so again.

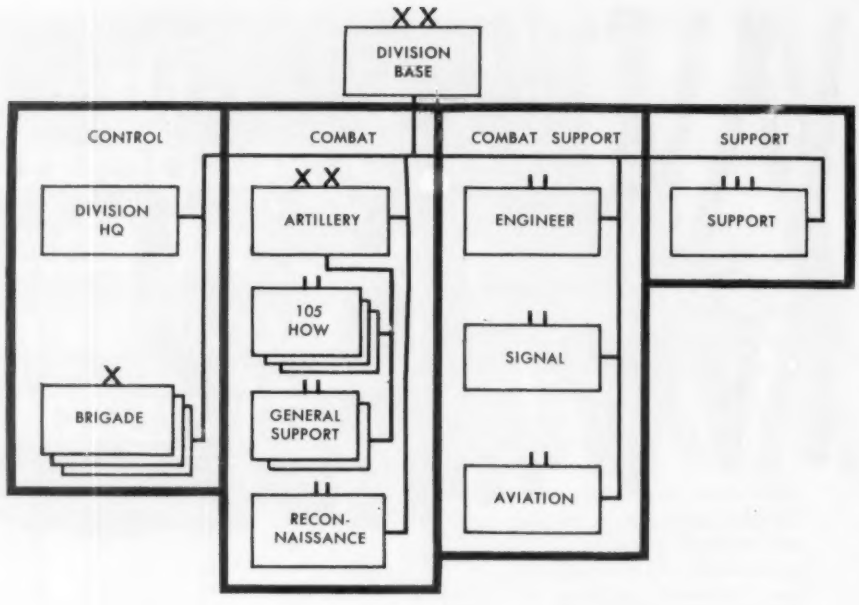
Four types of divisions will appear in the new tables of organization: airborne, infantry, armor, and mechanized.

All divisions will have the same type of division base. Each base will consist of a command and control element, a combat element, a combat support element, and a support element.

Command and control element

The command and control element includes division headquarters and three brigade headquarters. Each brigade headquarters can control the tactical operations of from two to five attached combat battalions, as well as combat support and administrative support elements needed to support this force. These latter elements are supplied from the division base. Normally, however, the brigade headquarters will not enter administrative channels between division headquarters and attached battalions. Yet it is hard to conceive of a brigade commander (brigadier general during hostilities, colonel in peacetime) setting out on a mission which might be far from his division headquarters without the proper administrative, combat and support tools. A close look at this brigade headquarters with its attachments while on an independent mission reveals a resemblance to the present-day armored cavalry regiment.

These elements of the division base are common to all types of divisions



Naturally, this unit would vary, depending upon the type of division from which it is detached. More later on types of divisions.

Combat element

The combat element of the division base consists of division artillery and the reconnaissance squadron. Three 105mm howitzer battalions and two general support battalions comprise the division artillery. The two general support battalions may be armed with various medium artillery tube pieces such as the 155mm or 8-inch howitzer or missile type artillery weapons. In the case of the armor and mechanized divisions, we visualize the 105mm pieces and all general support weapons as being self-propelled; this is not necessarily so in the other two types. Here again we see any one of the three light artillery battalions capable of attachment to a brigade if the situation requires it. Also, an attachment from the general support artillery could be made should the division commander deem this appropriate.

The reconnaissance squadron—eyes and ears of the division—has three troops, capable of ground mobile operations and married up with an air cavalry troop. This aerial troop extends the division's surveillance and reconnaissance capabilities. All of its functions are tactical.

Combat support element

The combat support element of the division base includes an engineer battalion, a signal battalion, and an aviation battalion. Basically, the engineer and signal battalions have engineer and signal missions in support of the division. In addition, they have a combat mission should the exigency arise.

The division commander will expect his engineer battalion to construct bridges, repair roads, and do all the various and sundry engineer tasks required within the division regardless of the type of division.

The primary mission of the signal battalion is to set up, maintain and repair, as needed, all communications nets within the division above brigades.

The aviation battalion has three missions. It is responsible for reconnaissance and surveillance tasks required by division headquarters. Working closely with the air cavalry troop of the reconnaissance squadron, it extends, rather than duplicates, these capabilities of the division. This squadron operates the complicated surveillance devices such as the Army's Mohawk plane and drones. Its third mission, and a most important one, is transportation of troops during an air-mobile operation. It can airlift one infantry company, and can also fly emergency supply and evacuation missions.

Other air vehicles in the division are located at division artillery and at each of the three brigades. Some day the optimum probably will be organic aviation in all battalions, but this is not feasible in this austere day and age.

Support element

The support element of the division base consists of a division support command headquarters, a headquarters company, an administrative company, a medical battalion, a supply-and-transport

battalion, and a maintenance battalion. This division support command is an operational unit, directly under the division commander. To the division it provides administrative support on a functional basis so as to furnish supply, field maintenance, medical support, and administrative services.

The term "functional basis" and its application within the division framework combines many of the support elements of the technical services in the supply-and-transport battalion and in the maintenance battalion. In these two battalions are centered resupply, maintenance, and other logistical functions which formerly were performed by the divisional units of quartermaster, transportation, chemical, ordnance, signal, medical, and engineers. It is true that the engineer and signal battalions in the combat support command perform some of these functions for themselves. But other users of signal and engineer equipment receive their support from the support command.

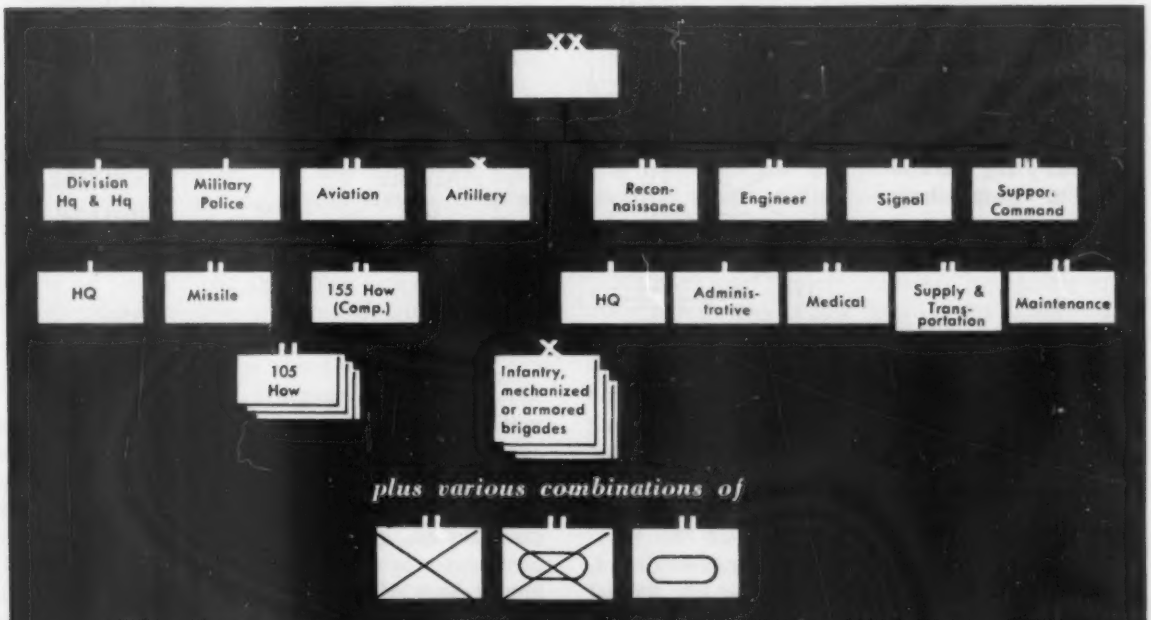
Much administrative support of the division during field operations is retained, to the maximum degree possible, above division. This will allow the division commander, his staff, and his subordinate commanders the maximum time to devote to tactical operations. All types of divisions will have the identical organizational composition, but their equipment and personnel in the fields of supply, transport and maintenance will vary with the type of division and the number of maneuver units or combat battalions attached to each division.

Combat maneuver battalions

As can be observed from the foregoing, we have achieved as much standardization as is feasible within the division base. This principle of standardization is carried throughout the reorganization of the four types of battalions which will make up the maneuver elements working under the brigades.

Varying in strength from only 800 men for the tank battalion to 900 in the parachute infantry battalion, all four battalions have many similarities. All are administratively and tactically self-sufficient. Each type of battalion is essentially of one combat arm. For example, armor soldiers will be assigned to the tank battalion, and infantrymen to battalions of mechanized infantry, infantry, and parachute infantry. This method of assignment makes training easier and more economical.

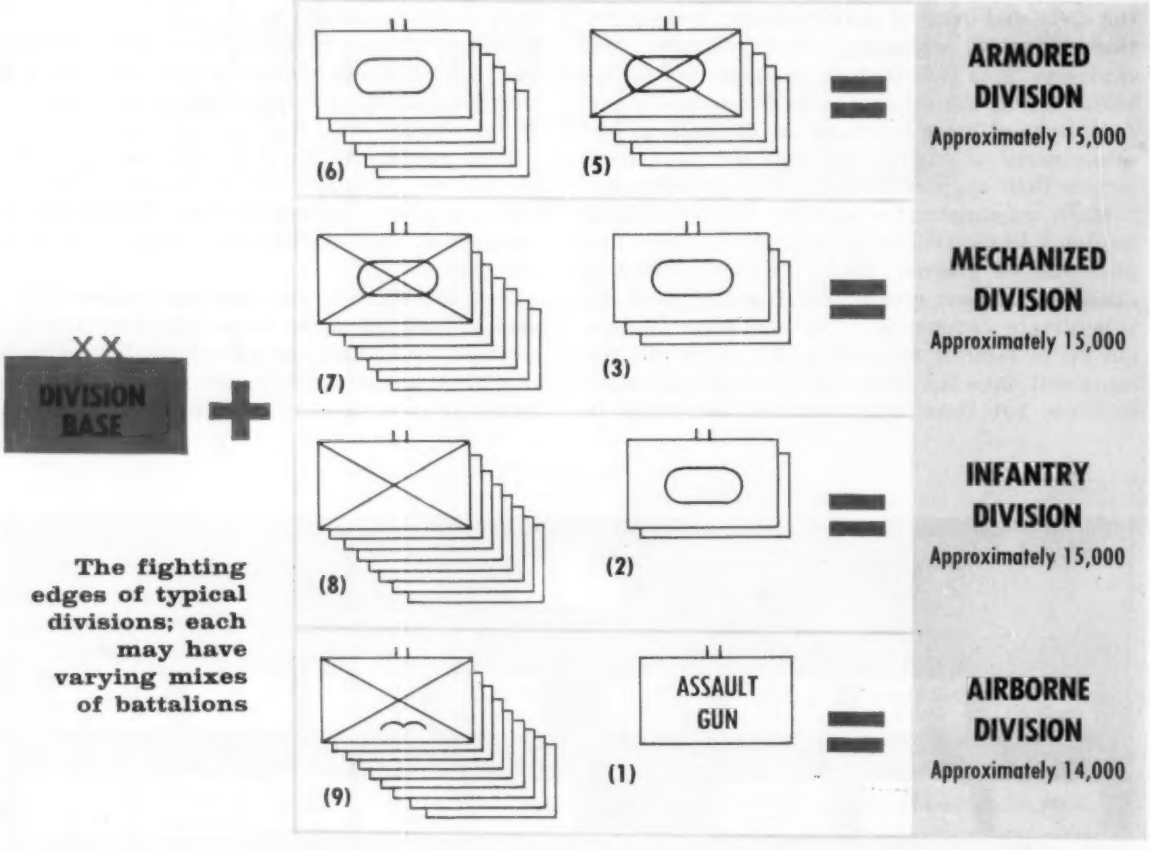
If a battalion is decimated as the result of a nuclear blast, it can be moved to a rear area and replaced by another battalion until it is refitted. In a given situation companies can be withdrawn intact from a combat maneuver battalion and



The Division Base is common to all types; its strength can vary from 6,000 to 7,200

cross-assigned to another type of unit. Simultaneously, the battalion, minus one or two companies, can accept, support and deploy companies of another type. This cross-assignment worked extremely well in our armor divisions during World War II, and proved most effective and economical. In other words, tactical tailoring to fit and perform a mission can be achieved between battalions in a rather minor engagement. This can be enlarged, and a brigade can become tank-heavy or infantry-heavy, depending upon mission and terrain.

in U.S. Army nomenclature—we undoubtedly would assign a greater ratio of mechanized infantry battalions to tank battalions. We would expect all troops of the division base to be mounted, many in track-laying vehicles, in both the armor and mechanized divisions. It goes without saying that in an infantry division infantry battalions will be predominant, and that an airborne division will be composed mainly of parachute infantry battalions. The airborne division will have no tanks, but it will have at least one assault gun battalion.



The fighting edges of typical divisions; each may have varying mixes of battalions

In order to form our division on its base and tailor it for a specific area and a specific mission, we can add to it any number of combat maneuver blocks. Current thought assigns an optimum of 10 or 11 battalions and a maximum of 15.

Any of the four types of division can be organized by combining different types of combat maneuver battalions within a division. For example, an armor division would have a preponderance of mechanized and tank battalions in about equal proportion.

To form our mechanized division—a new name

In the infantry and airborne divisions we can expect a paucity of vehicles, since neither type is motorized. However, both can accept vehicle attachment for motorized operations. Both types can also use air or sea lift if required. The approximate optimum strength of armor, mechanized, and infantry divisions is 15,000 each, and the airborne division, 14,000. These divisions are composed of various types and numbers of "building block" battalions. Each division will have the "mix" of battalions that best adapts

(Continued on page 62)

Radiation Exposure and the Tactical Mission

Control of dosage is the commander's problem

By H. PAUL WHITTEN

IN any future battle American troops may face a new hazard: the threat or presence of radioactive contamination. They must accept and train for this hazard since they may be exposed to it. How may a commander control radiation exposure and at the same time accomplish his mission? In considering this question it is important that the commander be bound by no hard-and-fast set of rules regarding radiation exposure. In the long run, any method for controlling the degree of radiation must aid the commander, not hinder him. In establishing radiation controls, he must weigh the radiation hazard against his tactical mission.

We must decide what basic criteria are needed to control radiation exposure in combat. Specifically, this is the question: should emphasis be given to dose rate control or to total dosage controls, or to both?

Dose rate controls are used to good advantage in standing operating procedures. For example, one standard sample SOP stipulates that troops will avoid dismounted movement into areas where the dose rate is 50 roentgens per hour or greater at the time of entry. In some SOPs, units are instructed either to take shelter or to move from the area when they encounter a dose rate of 50 *r/hr*. The use in SOPs of dose rate limitations such as these certainly will promote efficient operations in radioactively contaminated areas. However, it should be pointed out that dose rates are meaningless unless we know the time of detonation and the decay factor for radiation.

An example will show how the use of dose rate criteria might mislead. If a person enters an area at H plus 1 (one hour after the detonation) where the dose rate is 10 *r/hr*, he will absorb approximately 24 *r* in 24 hours. If he enters it at H plus 24 where the dose rate at the time of entry is 10 *r/hr*, he will absorb approximately 158 *r* during the next 24 hours. Note that the same dose rate criterion was used (10 *r/hr*) and the same period of stay in the contaminated area; but in the case of early entry (at H plus 1) the total dose was much less than for later entry (at H plus 24). This is because the radiation dissipates much faster during the first 24 hours than during the second 24-hour period. In combat you will not always know the age of fallout, and in areas having overlapping fallout patterns from multiple detonations, it will be especially hard to determine.

Certainly the use of dose rate criteria in controlling radiation exposure will assist the commander, but as we have shown, there are limitations to this method. Total dosage registered on a dosimeter does give a fair estimate of the quantity that people absorb. Therefore, in their operational control of the radiation exposure hazard, commanders must give primary attention to total dose criteria. First they need to know what doses will cause certain effects in humans. Knowing that, they can figure out how likely their troops are to become ill or to die if they get doses heavier than a certain measurement. In other words, to aid him in determining the degree of risk he will accept, the commander needs reliable data on the effects of radiation. This information will be his "reference" doses. If he can possibly avoid it, the commander will not want his combat troops to be rendered ineffective from radiation exposure during a single operation. Therefore, he will need an operation exposure guide for a particular action (usually lower than the reference dose), taking into consideration the possibility that he may need his troops in a subsequent engagement.

Understanding the terminology

We have seen the importance of measuring total dose. Before we can talk intelligently about radiation exposure control we must understand the terminology. During the past such terms have been used as *command dose, tolerance dose, maximum permissible dose,* and *acceptable dose.* If you compare the meanings of these terms as given in various publications, you will find that they have not been clearly defined. Furthermore, the definitions are not consistent among all publications. As a result, a term can mean one thing to one person and something else to another.

The definitions that follow describe the control criteria the commander needs in using the total dose control concept.

Operation exposure guide is the maximum amount of nuclear radiation, specified by the commander, which troops may absorb while on a

particular mission or missions. This exposure may or may not produce early physiological effects. The operation exposure guide will be used as a planning factor for the commander and may be exceeded as the combat situation dictates.

Reference dose is that amount of penetrating, whole-body nuclear radiation which is related to certain early effects in humans. The reference dose is based on radiation effects data.

It is possible to have several reference doses, or in some instances, a dose range; for example, the dose range during which sickness is likely to occur, or the dose range during which death may be expected. In other words, reference doses are those specified in tables of effects. The commander can examine the reference dose tables and determine the probability of sickness or death occurring to his troops if certain doses are exceeded.

Effect on combat operations

We know there is a need for radiation exposure control to assist in maintaining the well-being of troops. Now let's examine the effect of imposing radiation exposure criteria on combat operations.

If the commander attempts to control the radiation exposure of his troops, it may tend to restrict his operations. On the other hand, fighting without knowing the probable results of exposure could prove fatal. It is possible that a commander who uses an operation exposure guide may find its use causes him to change his plans. For example, for a certain mission he may have to use a combat element with a low radiation dose instead of another which was originally intended for that mission but which has previously absorbed a relatively high radiation dose. Without due consideration it might be said that "an operation exposure guide of 20 *r*, 60 *r*, or even 100 *r* for one operation will not cause casualties."

This may be true for a unit which has absorbed no previous radiation. However, if for example a unit already has an effective dose of 120 *r*, an additional 80 *r* might render it ineffective. If this unit is in the attack or in an important holding action, the operation would probably fail. On the other hand, if a unit with an effective dose of 20 *r* is used, the additional 80 *r* would not render it ineffective. This points up the fact that in establishing operation exposure guides, the commander must consider his unit's previous radiation status. He must realize that he must make every effort to keep his entire command fit for further engagements in contaminated areas. In other words, his outfit must live to fight another day.

We see that command control of radiation exposure may result in a threefold effect on tactical operations:

(1) It may, in conjunction with many other considerations, cause the commander to decide on one course of action in preference to another.

(2) It may influence his decision to employ one unit in preference to another in a given operation.

(3) It will necessitate establishment of a method of measuring and recording radiation exposure of troops or units.

Here one point must be emphasized. It is meaningless to give *one* categorical value for the operation exposure guide that will hold throughout a campaign or a war. Rather, the commander sets an operation exposure guide for *each* operation based on radiation exposure information and the combat situation. The question is: what is the most effective way of providing the commander with the data he needs to set an operation exposure guide? Numerous tables of radiation effects are available to him, but it would be rather cumbersome to use all of them in establishing an operation exposure guide. In fact, the various tables do not agree in all cases. Therefore, a more concise, easy-to-use presentation of data is needed.

Units in radiation exposure categories

We have seen that in order to use the concept of operation exposure guides, we must record past exposure of units. Placing units in categories according to their exposure status would determine how much further action the units could be used for that involves radiation exposure. The small-unit classification appears to be the most realistic approach. For example, it appears reasonable to record radiation exposure of platoons. Then, platoon-size units could be classed in three categories according to their radiation exposure: Full Remaining Radiation Service (FRRS); Limited Remaining Radiation Service (LRRS); and No Remaining Radiation Service (NRRS).

Table I shows the criteria for placing units in FRRS. Full Remaining Radiation Service applies to a unit that has no dose or a militarily negligible dose. Units can be considered to have received no radiation; in other words, an exposure in the next operation that does not exceed the maximum exposure for this category should cause no loss of effectiveness.

TABLE I. Criteria for placing units in dosage categories

Full Remaining Radiation Service (FRRS)

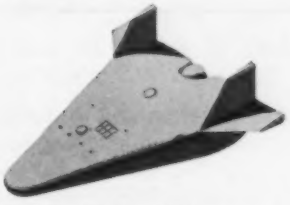
1 day	less than 40 r
1 week	less than 60 r
1 month	less than 100 r

Table II lists criteria for placing units in the Limited Remaining Radiation Service (LRRS) category. LRRS applies to those units which have

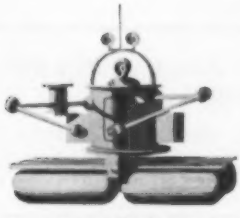
Lunar VTOL Vehicle. A rocket-propelled craft designed to collect lunar ore specimens

Nuclear Space Ship. An unconventional design by Douglas with living quarters around the ring at the bottom. On landing, it would ease down, ring first.

Nuclear Space Ship. A Douglas design for a space ship with crew quarters and control rooms in the nose, nuclear reactor in the rear.



Supply and Escape Vehicle. A compact re-entry vehicle to supply orbiting space stations or to return crews to earth.



Lunar Service Vehicle. Travels like a "swamp buggy" on inflated rollers. Mechanical arms provided to handle outside chores.

Nuclear Space Ship. A future, medium-thrust, nuclear-electric space ship for one-year interplanetary round trips (Martian and Venusian).

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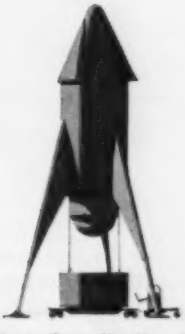
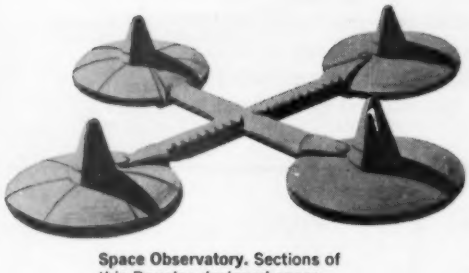


Lunar Cargo Handlers. Would load lunar ore samples into containers to be towed back to earth by rockets.



Space Observatory. Sections of this Douglas-designed space station would be sent into space in rockets and be joined together in orbit.

Lunarmobile. Donut-shaped exploration vehicle to use rocket power in space and tractor treads on the moon's surface.

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taken a significant but not a dangerous dose. Such a category may include a dose range from just below the sickness threshold to one where the probability of sickness is approximately 0.15. If the combat situation permits, units in this category should be exposed less frequently, and to a lesser dose risk, than FRRS units.

TABLE II. Criteria for placing units in dosage categories

Limited Remaining Radiation Service (LRRS)

1 day	40 to 120 r
1 week	60 to 160 r
1 month	100 to 300 r

Table III indicates criteria for placing units in the No Remaining Radiation Service (NRRS) category. NRRS would apply to those units which have had a dose which makes further exposure dangerous. In other words, further exposure in the immediate future would result in sickness and deaths. If the situation permits, units in this category should not be exposed to any further radiation for at least two months.

TABLE III. Criteria for placing units in dosage categories

No Remaining Radiation Service (NRRS)

1 day	greater than 120 r
1 week	greater than 160 r
1 month	greater than 300 r

The dose values given in these tables are reference doses. They were determined by considering various tables of effects. These reference doses fall in line with most of the values given in the various radiation effects tables. However, we emphasize that the values suggested are *for guidance only*. The values were not arrived at by magic, and certainly are subject to change as the effects of radiation on man are better understood.

We stress again that it is meaningless to give the commander one value as the operation exposure guide he must hold throughout a campaign or a war. However, we can assist him in selecting an operation exposure guide for an action. We believe the degree-of-risk concept will be his best guide.

TABLE IV. Degree of risk criteria for units with negligible exposure

Negligible risk	less than 20 r
Moderate risk	20 to 100 r
Emergency risk	greater than 100 r

Table IV shows the degree of risk criteria for units with negligible previous exposure, or those in the FRRS category. At *negiligible risk* (less than 20 *r*) the commander is practically assured of the complete safety of his troops. *Moderate risk* (20 to 100 *r*) is the greatest degree of risk to be considered for troop units that are expected to fight at peak efficiency after exposure. *Emergency risk* (greater than 100 *r*) is the degree of risk to be considered only when the combat situation demands that it be accepted.

Radiation dosage categories of the units would be maintained on a chart similar to Table V.

TABLE V. Chart for radiation dosage status of platoons

Month 6

Platoon	Day 1	2	3	4	5	6	7	8	—	31	Rad Status	Remarks
A-2	I	III		II			I				LRRS	Platoon was FRRS on 1 June

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All the platoons in the battle group are listed in the column *Platoon*. The dosage in units of 20 *r* will be posted each day (or after each operation if this is feasible) and indicated by a mark: | for 20 *r*, || for 40 *r*, ||| for 60 *r*, and so on, in the appropriate date column. By using the data from Tables I, II and III, FRRS, LRRS, or NRRS is entered in the *Radiation Status* column. The radiation status of a particular platoon will change from day to day and from week to week, but since the chart is posted on an overlay of transparent plastic, when appropriate the radiation status is merely erased, and the radiation status of the platoon on the date is posted.

For example on 7 June our chart might look something like Table V. The 2d Platoon of Company A took 20 *r* on 1 June, 60 *r* on the 2d, 40 *r* on the 4th, 20 *r* on the 7th, or 140 *r* in a week. Note that this platoon was FRRS at the beginning of the period. We see from Table II that it is LRRS on 7 June.

You may ask what category we assign the unit at the start of the next month (July) should it not take any additional radiation during June. To answer that question we must explain the concept of "effective" dose.

"Effective" dose

If a period has elapsed since a dose was received, the body recovers from a portion of the radiation. The effective dose is, for all practical purposes, the undissipated dose. For example, the reference dose tables (I, II and III) have biological recovery built into them. Note from Table I that if a dose of 100 *r* is taken over one month, say 3.3 *r* each day, theoretically this is the same as absorbing a dose of less than 40 *r* on the thirtieth day. In other words, on the thirtieth day the effective dose is less than 40 *r* although a total dose of 100 *r* has been absorbed. Similarly, if a dose of 100 *r* is taken on the first, and no subsequent radiation is absorbed for the rest of the month, at the end of that month the effective dose would be less than 40 *r*. For prolonged exposure or for calculating the effective remaining radiation dose, the currently accepted formula is a recovery rate of 10 per cent per day of the remaining dose, up to 45 days. For each separate exposure a permanent or undissipated residual of 10 per cent is considered.

Now to the problem at hand. If the unit (Table V) is LRRS on the seventh day and does not take any radiation during the rest of the month, at the end it will have an effective dose of less than 40 *r*. It can then be classified as FRRS. The troops and units in the various categories should be reassessed periodically to determine any additional exposure and retention which might place them in another category. This illustrates the need for personal as well as tactical (unit) dosimeters. Personal dosimeters should be read at the end of each month, more often if possible. After personal dosimeters are read, an appropriate category is assigned the unit based on the effective dose of the majority of the troops. For example, if a majority of the outfit has an effective dose of 40 to 120 *r*, the unit would be classified as LRRS. A new category assignment will be necessary at least once a month, since owing to casualties and replacements the unit may no longer resemble the original one so far as radiation exposure is concerned.

Note that the values in the category and degree-of-risk tables are in multiples of 20 *r*. This is convenient since the scale of the current tactical dosimeter (IM-93) is divided into increments of 20 *r*.

It is important to remember that the category and degree-of-risk tables (I to IV) serve only to guide the commander and his staff. The commander must not be restricted by a stringent set of rules regarding radiation exposure. He may expose his troops to any degree of radiation he sees fit, as demanded by his mission or the combat situation. He does so, however, in full knowledge of the possible results.

The dosage category system would work best under the unit replacement system. Of course, there will probably always be some individual replacements. As we pointed out earlier, the procedure of keeping radiation exposure records for each soldier would work harmoniously with the radiation category system. Individual replacements should be assigned only to a unit whose exposure status is similar to their own.

Command responsibilities

Since the battle group, battalion, or comparable unit is the smallest having an organic staff that can evaluate records, platoon exposure records should be kept at such headquarters. Within the infantry division the data would be sent to battle groups in this way:

(1) Tactical (unit) dosimeters, usually two per platoon, will be read daily or after each operation, whichever is feasible.

(2) The average reading of the platoon (usually the average of two dosimeters) will be reported by platoons to company.

(3) The platoon readings will be reported daily (or when the situation permits) by companies to battle group.

(4) At battle group the reading in increments of 20 *r* will be posted on the chart (Table V).

The designation of the numerical value of operation exposure guides should not be established at units smaller than battle groups (or units of comparable size). The division commander may

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direct his battle groups concerning the operation exposure guide. This control may be necessary to insure the effective future use of battle groups in accordance with his plans.

It is best that reports on radiation exposure status of small units (platoons and perhaps companies) be forwarded no higher than battle group. Daily (or after each operation), the battle group should forward to division only data concerning the effectiveness of the command; that is, the percentage of the command in each category. If the division commander wishes more detailed information, he can get it from the headquarters of his battle groups. The division commander may establish an SOP outlining the radiation exposure data he desires from battle groups. The dosimetry information concerning battle groups and units of comparable size normally should be forwarded no higher than division. In most instances, the corps or army commander will be concerned only with the general radiation status of the division.

At battle group or comparable headquarters, staff supervision for maintaining data on the radiation exposure status of units should be a function of S3. This is logical, since G3 (S3) is responsible for evaluating combat effectiveness, and the previous dose taken by a unit has a definite bearing on its combat effectiveness. S3 should designate an officer to record radiation exposure data and post the exposure charts of units. When a headquarters has a chemical officer, he should be so designated. The medical officer should be responsible for advising the commander concerning the operation exposure guide for a particular operation.

It appears logical that the over-all radiation exposure status of the division be maintained at the division's chemical, biological and radiological section (CBRS). This makes sense, since radiological monitoring and survey data for the division are kept there.

In discussing records of radiation exposure of small units, we have used as examples the platoon-sized outfit and the infantry battle group. There will be some minor exceptions to this practice among other elements of the different types of divisions.

How the system works

Finally, to show how the system works, here is an example of setting an operation exposure guide.

It is 7 October. The battle group commander wants to commit Company B to action on 8 October in a radioactively contaminated area. He is unwilling to exceed a moderate risk. In planning his action, the commander needs to establish the operation exposure guide. He may or may not announce this guide to the units concerned. Before setting the operation exposure guide, he consults S3 and the medical officer. S3 directs the chemical officer (if one is assigned; if not, another qualified

TABLE VI. Chart for radiation dosage status of platoons

Month 10

Platoon	Day 1	2	3	4	5	6	7	8	—	31	Rad Status	Remarks
B-1		/	/	/							FRRS	
B-2		/	/								FRRS	
B-3											FRRS	
B-4		/									FRRS	
C-1											FRRS	
C-2											FRRS	
C-3											FRRS	
C-4											FRRS	

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designated officer) to review the radiation status chart and advise him concerning the radiation status of Company B.

On 7 October, when the chemical officer (or other qualified designated officer) reviews the radiation status chart (Table VI) he finds that the radiation status of Company B is FRRS. Sometimes he may also have data concerning the dose rates in the contaminated area which would allow him to estimate the hazard from radiation. This useful information would have been obtained from the division's CBRS.

The medical officer notes that FRRS corresponds to an effective dose of less than 40 *r* in one day (Table I). Since the commander has specified no more than a moderate risk, the maximum total dose allowed will be 100 *r* (Table IV). The medical officer could very well suggest an operation exposure guide of 60 *r*, the difference between 40 *r* and 100 *r*. If the chart shows that another unit, say Company C, has taken *no* previous exposure, for this unit the operation exposure guide could be set at 100 *r*.

The medical officer would probably advise the commander that units in the NRRS category be not committed unless the commander desires to take an emergency risk. For units in the LRRS category, the risk could be either moderate or emergency, depending upon the exact dose previously absorbed. If the commander specifies only a negligible risk, then only those units in the FRRS category should be considered, and the medical officer should suggest an operation exposure guide of 20 *r*. If the commander indicates he will accept an emergency risk, operation exposure guides will necessarily be set at a higher value. However, even in these circumstances, the commander should be advised what units to use so that he may risk the least number of casualties from radiation exposure.

IF we must live with radioactive contamination on the battlefield, we must know the score on radiation exposure. The method outlined here may not have all the answers, but we believe it is a start in the right direction.

The new army divisions

(Continued from page 52)

itself to the environment or mission for which it is intended.

An organizational concept

What do these changes mean to the Army? What is the current state of the art, based on this new concept? Where do we go from here?

To some of us, this concept might appear to be old hat, to others brand-new. It is a step forward in improving the capabilities of the combat division to cope with the enemy on either the nuclear or nuclear-free battlefield. It will enhance our tactical mobility, both on the ground and in the air, yet standardize many elements of all divisions. All this in turn will facilitate training and be decidedly more economical.

Based upon the current world-wide dispersal of our Active Army forces, it is highly probable that our divisions in Europe will be of the armor or mechanized type. In Korea they will be tailored for the mountainous country and be heavily weighted with infantry. STRAC units on constant alert will be of the airborne type. In sum, units will be tailored for the geographical area in which they are likely to be employed.

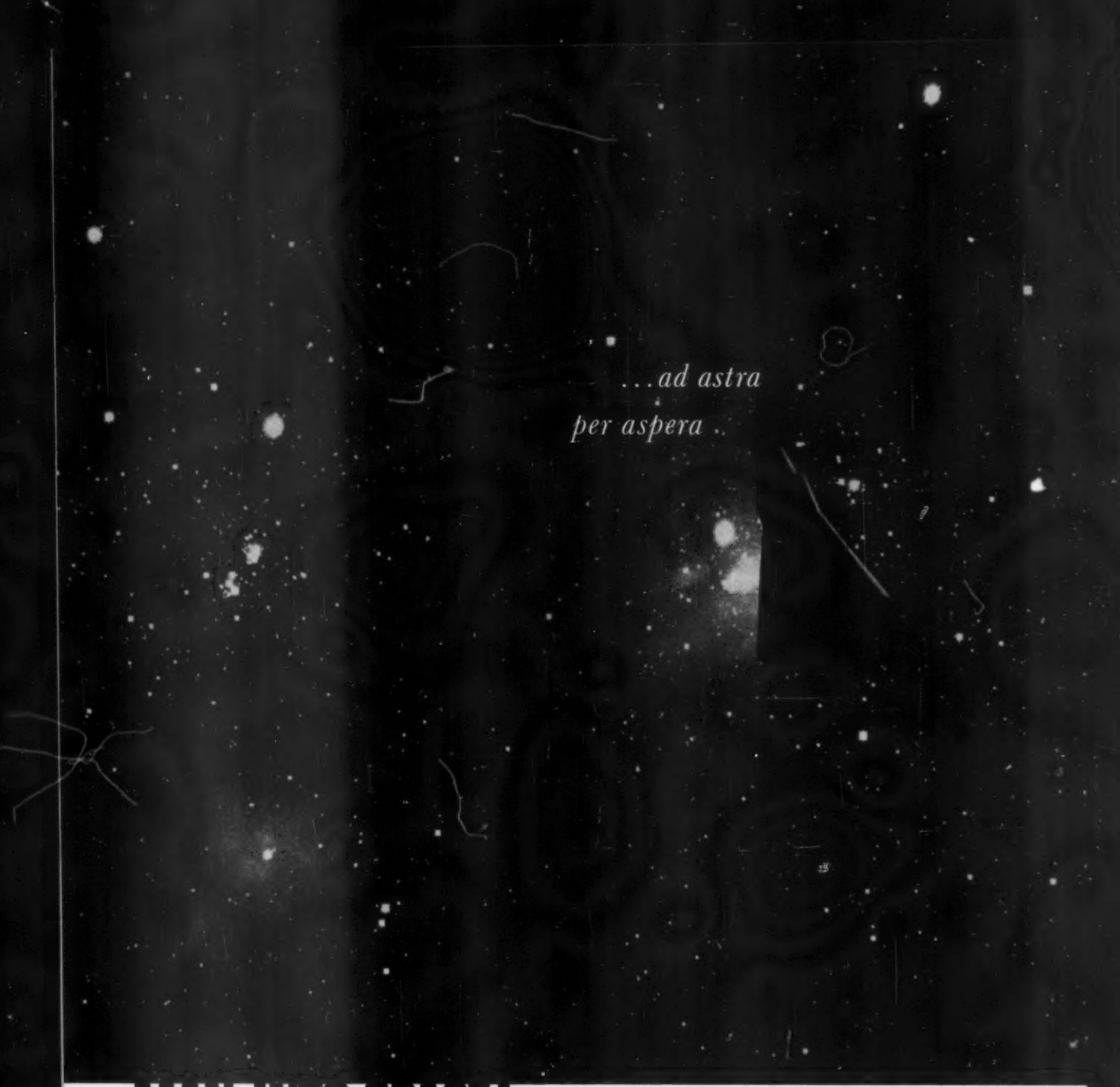
It is not feasible to adopt a concept embracing one single standard division properly equipped to meet any exigency on any piece of terrain in any part of the world. No type organization with standard armament and equipment could be developed to fulfill such a mission. Like a tailor-made suit, these organizations must differ sufficiently if they are to fight on different types of terrain in different situations.

Organizations formed along this concept do not call for new modern equipment. *That need is already pressing.* Modernization of equipment is overdue. Setting up our organizations now to meet the demands of the future and being prepared to employ modern new equipment as it becomes available is another step forward. Too often new equipment has been available, but the know-how to properly employ it has been missing.

Increase in actual numbers of weapons remains to be determined as tables of organization and equipment are developed. However, after a first glimpse, we believe that firepower will be increased along with mobility and flexibility in unit assignments.

To some of us these changes may seem too close upon our recent conversion to the Pentomic division set-up. We live in a world of rapid change, and must move with the times. To lag behind invites disaster. Any change made now which will better prepare us if we are forced into war will assure many benefits for the future.

Undoubtedly, there will be changes in this new concept—probably before this article gets into print. But it is a forward-looking concept which would prepare us for meeting any future emergency with confidence, determination, and the will to win.



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WHY 50 AND 10? *We need a new approach to sharper and clearer instruction of reservists.*

Col. JOHN B. DE HOFF

Look at any outfit's training program and check the timing. Chances are each instruction period begins on the hour, and is separated from the next by a 10-minute break.

Why?

I can advance several reasons. It is convenient for the commander and his assistants to have activities begin on the hour; it is also comforting in the exactness of one instruction each hour, on the hour. Second, it follows an old and familiar marching practice, dating from 'way back, which prescribes marching for 50 minutes and resting for 10. Finally, it matches schedules of instruction at senior educational institutions, such as colleges, where usually students are allowed 10 minutes to disperse and reassemble at lecture rooms or laboratories.

Psychological research shows that certain portions of time are allotted for various activities, according to group mores; further, we find that deviations from these familiar time periods are sensed as definitely uncomfortable. For example, in our culture, 15 minutes seems the minimum length of a business appointment; any shorter period seems inadequate. Yet, in societies to our south, two or three hours may be needed to complete the same business, additional time being devoted to extra amenities. Again, in North America, 45 minutes is the minimum accepted period of a purely social visit; however, in the Near East and in the countries south of the Mediterranean, a similar occasion may require closer to three days.

While a change from 50-and-10 may seem strange to soldiers, we can take a tip from schedules of scientific or business conventions and meetings. Here the periods allotted for presentations may be any of 10, 15, 20, 30, 40, or 50 minutes. Usually these apportionments are quite consistent, and are not greatly varied at any one gathering. Likewise, military instruction can be timed to suitable, divers intervals, and not always fitted into a standard 50-and-10 mold. County Fair demonstrations—where students travel in small groups from station to station of instruction—already do this through the use of shorter time allowances, as well as a unified program.

Variable training-time periods are especially appropriate to USAR units, which are instructed to devote a minimum of two full training hours per evening drill, "exclusive of breaks." Uninterrupted work activity for two hours is easily tolerated, for the men can walk about, smoke and converse; but too often two full hours of instruction is onerous and ineffective. Breaks only extend the evening sessions irksomely, as they are added on to drill time. It is precisely in these evening two hours where three periods of 40 minutes each could be permitted; the middle period could be a demonstration, some activity involving participation, a drill, or other exercise. Short breaks for smoking only, or smoking in class, could be allowed. Changing classes in formation would eliminate breaktime.

Opponents of shorter training periods stress the opinions of training inspectors about less than orthodox proceedings, and the difficulty of adding up the "hours of instruction," for the record. The objection based on the difficulty of adding 30- or 40-minute periods to meet required *hours* of instruction overlooks two important facts: it is even harder to add 50-minute periods; it overlooks the commander's responsibility for training his men.

As for the first objection, we need a new approach to sharper and clearer instruction of reservists. Two hours an evening is simply not enough time to train in a manner designed for a five-day week. Subjects could be taught in cohesive blocks, with the shorter component sessions bringing instruction to a sharper focus, and forcing an emphasis of need-to-know and the expense of nice-to-know.

Thus, with individual and unit performance vigorously stressed by interested training inspectors, total ATP hours of training would no longer be regarded as a formal requirement, but as the helpful guide for which they were designed.

ADM FOR DML. *We have a new tool that can do demolition (dml) jobs heretofore considered not feasible*

Capt. WARREN P. SCHILLING

We're in "the next war." As usual, the order that comes down to the field commander is explicit: take out that bridge—all of it.

An architect would call this bridge beautiful. The combat engineer back from the recon mission says it's solid. The massive 60-foot-high stone arches spring up and out, curving smoothly across the void of the ravine and into the tunnel on the far side. The enemy will appreciate its beauty too, if he finds it intact when he emerges from the tunnel.

Bridge demolition is tedious work, even when it involves small structures. Many men take many hours to load, move, and unload the necessary equipment and high-explosive. Time moves on swiftly while you

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measure, count, stack, cut, crimp, and tamp. But this is the next war, so you use an ADM.

The Atomic Demolition Munition is now available to commanders. The U. S. Army Engineer School at Fort Belvoir is training officers and enlisted men in the use of this new hardware. Graduates of these special demolition courses form a trained nucleus for integration into using units. By using his imagination, coupled with the newly gained knowledge and skills of these soldiers, the combat commander can capitalize on this vital new demolition tool that has been placed at his disposal.

The ultimate users—the men who emplace the ADM and detonate it at the appointed time—are the soldiers in combat engineer units. The first ADM was a Model T, but even this early device seized the imagination of soldiers in the field and those who developed the doctrine for its employment. Since these first models were made available to the Corps of Engineers, the art of making warheads has come a long way. But we must not rest content. New concepts in warhead design open whole new worlds for those who develop the doctrine for employment.

ADMs need not replace "conventional" types of explosives on demolition jobs where obviously current types will do—say against such targets as tunnels, power dams with spillways, railroad marshaling yards, and port installations. A thing is not better just because it is bigger. But in ADM we have a new tool with new potentialities, that can do jobs that heretofore were considered not feasible.

Set an ADM in a tunnel and truly your faith will move mountains. Try one on a dam's spillway and it will take more than a Dutch boy's finger to stop what you started. Tangle the tracks in a railroad marshaling yard (if you don't vaporize them) with one and people ambitious enough to attempt repair won't be around tomorrow because of residual radiation. A machine gun couldn't do a better job. Suppose, before our ship pulled way, we had planted an ADM at Wonsan in Korea!

Logisticians probably never will see the mushroom cloud of an ADM, but they will tell you happily how its use shortens the long tail that wags behind most major "conventional" demolition jobs.

For years philosophers have been telling us we must seize our opportunities. In combat, however, the soldier usually finds that opportunities are much more fleeting than those encountered by people in other professions. Considering the devastation and the magnitude of the demolition it can produce, ADM has an amazingly quick response to target acquisition. ADM can be brought up and emplaced while you would still be loading your truck convoy at the ammunition supply point for that big "conventional" demolition job.

Finally, place it where the hair lines cross, using only one round. The circular error probable (CEP) is zero.

STRENGTHENING NATO'S ARMY. *Standardization is eliminating diversities*

Lt. Col. JOSEPH L. KNOWLTON

"Non-Nuclear NATO Army," in the December 1960 issue, offers excellent advice to those who can influence national policy with respect to taxes, resources, budgets, and other "high-level" activities. No one can disagree with the thought that NATO must have an integrated, well-supported army.

Those readers who participate in the "high-level" activities cited in the article, have a difficult problem to overcome: obtaining more funds for a well-supported NATO army. On the other hand, it is important to examine a current program through which combat efficiency in such an integrated NATO army is being dealt with now, at insignificant expense. Also, additional close attention to the program can strengthen NATO's shield and sharpen its sword even more—again at insignificant expense.

I mean the program being administered under NATO's Standing Group by the Military Agency for Standardization (MAS). One of its main objectives is to obtain agreement among the various national military forces to conduct certain operational procedures in a certain way—the same way. These accords are called Standardization Agreements (STANAG).

For example, it is not through coincidence that units of the French Army, the Belgian Army, and the U. S. Army (as well as other NATO armies) use the same operations order. Rather, it is the result of STANAG 2014 (Operations Order) whereby the various NATO military establishments train their units through this common method, in branch schools, at military staff colleges, through training manuals, and so on. In the same manner, many other important activities—communications, liaison, artillery support, mapping, medical, intelligence reports, and others—many more than a hundred are in effect now, more than that under development.

Obviously, this standardization scheme can exert considerable effect on the combat effectiveness of an integrated, well-supported NATO army so ably recommended by Colonel Shanley. Strong support of the standardization program will contribute towards achieving the goal—now, and at insignificant expense—and one does not have to be "high-level" to help.

First of all, U. S. Army participation is partly covered by AR 1-71 (Standardization Among the Countries of the North Atlantic Treaty Organization). Once the international agreements are reached, Department of the Army publishes implementing instructions through letters, circulars, bulletins, changes to field manuals and the like.

Generally, these instructions become effective upon receipt. This allows U. S., French and German forces in Central Army Group—and similarly in Northern Army Group and elsewhere—to train according to common doctrine, where this is appropriate, without an endless series of local expedients. Commanders and staffs concerned might well insure they are achieving such benefits.

Finally, the program needs advice from commanders and staffs regarding areas of activity where standard-

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ization is required, or is inadequate or faulty. Surely during maneuvers with other Allied forces major problems have arisen which stemmed from varying operational doctrines. Shouldn't we eliminate many of these difficulties now, through agreed-upon military training and education, so that commanders and staffs can devote maximum attention to problems imposed by enemy action?

In addition to procedures, we must deal with materiel and equipment. We all know the bulk of this is the business of the research and development people, and is being handled elsewhere. But, in addition, there is much to the saying "for want of a nail, the shoe was lost." For example, can a British lorry, because of dimensions, locations of pins, jaws, pintles and hooks, tow a Belgian trailer, or a U. S. artillery piece? Successful implementation of STANAG 2063 (Towing Attachments) insures that it can.

On the other hand, do we in the U. S. Army have specialized cargo-lifting gear for helicopters—special hooks and eyes? Can we lift Allied combat vehicles as quickly as we can our own? Or is it a matter of local field expedients? Can we eliminate the need for many field expedients through simple standardization agreements? Those commanders and staffs actually involved in such operations have the answer. They should recommend what measures will enhance the interoperability of NATO armies. A policy which fails to bring such experiences to light serves neither national nor allied interests.

The degree of combat effectiveness of the various existing—and developing—national armies which comprise the NATO shield stems in part from their ability to operate smoothly as a coordinated allied force. Serious attention to the NATO standardization program will eliminate many diversities, major and minor, which characterize any allied operation, and will increase the combat effectiveness of NATO *now*.

WEAR TWO HATS BEFORE YOU CHARGE. *Be sure your evidence will stand up in court*

Maj. THOMAS T. JONES

It's only human to blame "the system" for our errors, and in attempting to define "the system" usually we come up with the wrong answers. I have found this true of the Uniform Code of Military Justice when enforced by small-unit leaders. When company commanders forward charges that leave a summary court or a higher one no alternative but that of acquitting an accused because of lack of evidence, the prestige of military justice is bound to suffer. Too often commanders prefer charges based on emotion or on a hasty decision unsupported by careful inquiry into the circumstances. When a soldier returns to his unit after having been thus acquitted, his commander's prestige also suffers.

When inquiring into an incident that might lead to charges, the company commander should wear two hats. In personally checking the circumstances and interrogating witnesses, he must be an incisive, penetrating, alert district attorney who is trying to build up a solid base of evidence. Then he must mentally change hats and as defense counsel attempt to punch holes in the testimony he has elicited. If unit leaders follow this system before filing charges, the Government will be saved time and money. Too often a unit commander will hear only testimony that he thinks will convict. He fails to pin down a witness to what he saw the accused do or heard him say. Some company commanders fail to recognize hearsay or other evidence that a court will not accept. Perhaps we can clarify my point through a couple of cases.

My first sergeant reported that the evening before, Private Disgruntled had refused to obey a direct order of the noncommissioned officer in charge of the extra-duty detail. Should he prepare charges? I questioned the sergeant, who stated that Disgruntled *had* disobeyed his order. Pinning him down to the exact language as he would have to repeat it to a court, I discovered that the sergeant was really at fault. His "order" was, "Either you wash those windows or I'll report you to the company commander." Disgruntled chose to be reported, so legally he wasn't guilty of anything.

Sometimes a headquarters usurps the prerogative of a subordinate commander; for example, when it tells a company or battalion commander he will or will not initiate charges, regardless of circumstances. At one post it was mandatory to court-martial a soldier after conviction in a civil court for a moving-traffic violation. Legally this isn't double jeopardy, but in spirit it is.

A soldier had been arrested for doing 60 in a 50-mile zone. He readily admitted guilt, but reported that at the magistrate's court, the charge was changed to drunken driving although he protested that he had had only one beer. The policeman who testified at the trial charged that the soldier's speech was thick, his eyes blurred, alcohol on his breath—you've heard it before.

My inquiry developed the fact that the testifying officer hadn't made the arrest, but had gotten the details from the patrolman who did. The arresting patrolman couldn't recall that the soldier was in *bad* shape; further, he admitted that the accused had brought his car to a stop within reasonable braking distance. That last admission cast at least reasonable doubt as to degree of intoxication. According to MCM, you must prove that the accused has lost the rational and full exercise of his mental and physical faculties. The patrolman agreed that, under that definition, obviously the accused wasn't drunk. No one had thought to compare the slim "evidence" with the very rigid requirements of proof demanded by the Manual for Courts-Martial. The soldier was acquitted by the court-martial, but the military justice system suffered another black eye.

In another case, a company commander filed charges based on an unsigned carbon copy of a routine MP incident report. He never bothered to check with the MP unit to obtain details. When the accused refused to answer his questions the company commander as-

LOOK TO **BELL** FOR LEADERSHIP, TODAY AND TOMORROW, IN

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sumed he was guilty. At the trial this soldier pleaded innocent. After two 40-mile round trips to summon several witnesses, their testimony, in addition to that of the arresting MPs, clearly established the fact that the accused had been merely a bystander. He was in the group, so his name was included in the report. Another prop knocked out from under the system.

Now in these cases, who was at fault, the system or the people who tried to use it in a manner that Congress never intended?

Let's guide the small-unit commander, but let's not tell him he will or will not prefer charges. At the same time, the company commander must understand how to properly administer the system. The method I recommend is that of wearing two hats during the preliminary inquiry before filing charges.

AN INTEGRATED ARMY. *Great possibilities exist for the future, where we face the problem of mass versus mobility*

Capt. A. P. DOBSEVAGE

What we shall say here is prompted by a measure of broadness and narrowness in thinking discovered during a recent USAR meeting where we lectured on the infantry company, mounted, in the attack. The 1950 manual notes that an interior company in the attack will have a normal frontage of 200 to 500 yards. The 1959 manual mentions that a company may *defend* up to 2,400 yards and even more. What will the 1980 manual say about frontages in defense and attack? Will the term "frontage" be meaningful?

In 1931 General Patton wrote: "No matter what the situation as to clarity of his mental perspective, the conscientious soldier approaches the solution of his problem more or less bemuddled by phantoms of the past and deluded by unfounded or unproved hopes for the future. So handicapped, he assumes the unwonted and labored posture of a student and plans for perfection, so that when the next war comes that part of the machine for which he may be responsible shall instantly begin to function with a purr of perfect preparation."

This caused us to reflect on what broad and almost unthought-of possibilities exist for infantry in the future, where we face the problem of mass versus mobility.

The principle of kinetic energy, "Mass equals Energy divided by the square of Velocity" ($M = E/V^2$) indicates that energy and velocity *can* be equated with mass. May we borrow this mathematical formula and apply it to a biologic-sociologic art? May we take the terms mass (also a military term), energy (mass, firepower) and velocity (vector mobility), and apply them to warfare so as to sketch an idea that some day others may refine?

In military terms, the velocity of mobility and energy of firepower have worked for victors in the past. We can think of huge masses that faced much smaller ones: Alexander's 47,000 against the one million of Darius at what we call the battle of Arbela; the British square of one infantry regiment against 10,000 Zulus; German armored infantry and tanks in 1940 smashing through larger masses of the Allies; or Frederick at Rossbach and Leuthen. Here huge masses were annihilated by smaller forces through superior firepower and psychological advantage.

We can imagine the possibility of today training an integrated army equipped with all sorts of mobility V and firepower E. If properly used, the E could be squared. Thus speed and energy will equal any mass M. But our enemy also has E and V, as well as M. Thus, we need more of that E power, and the ability to use it, than the enemy will be able to muster.

When air and space capabilities are equalized, then sea and ground capabilities become important. If seapower can be equalized, then ground combat dominates. We can imagine companies traversing broad areas of terrain that has been neutralized and contaminated by CBR weapons. We can imagine lightning strikes that neutralize nerve centers and the logistical lines and headquarters of field armies. To do these things such companies must be properly equipped and supported.

These outfits would need all the new weapons, from the M60 machine gun to Davy Crockett, from tube artillery to missiles; all the air and ground vehicles, all the communications and electronic equipment; all the latest in CBR weapons. If properly trained, these units would not be useful in areas smaller than zones several miles wide, because such a company would get in its own way.

In some situations such companies, trained to use the most modern weapons, might fight as parts of a battle group. They could defend an area as broad as New York State—not as a containing unit nor as an outpost group, but as an integrated EV^2 unit, the equivalent of tremendous mass.

Does this mean that traditional warfare is obsolete? Not so long as armies are traditional and obsolete. The new will come out of the old. The new will come through the enterprising efforts of some modern Alexander who understands that Einstein has replaced Newton in the field of physics, and that warfare too has made and is continuing to make parallel strides. The principles of war are still valid. Yet mass can be transformed into speed and firepower of all sorts. Individual resourcefulness will count for more than it ever has in past wars. An integrated army would be an important step in this direction.

Would that every prospective officer and noncommissioned officer could learn to handle effectively the fighting tools of armor, artillery, air, infantry, ordnance and engineers. It couldn't happen overnight. It could occur only in a select group of soldiers of high intelligence, mechanical aptitude, and physical stamina. It would have to begin in our schools, at age nine or 10. Those students with the keenest ability should be trained perhaps for diplomatic, judicial, political and scientific posts, and the career of a graduate-school teacher. The next rung would staff the three EV^2 divisions.

The raw material is there. Can we pull ourselves up by our bootstraps?

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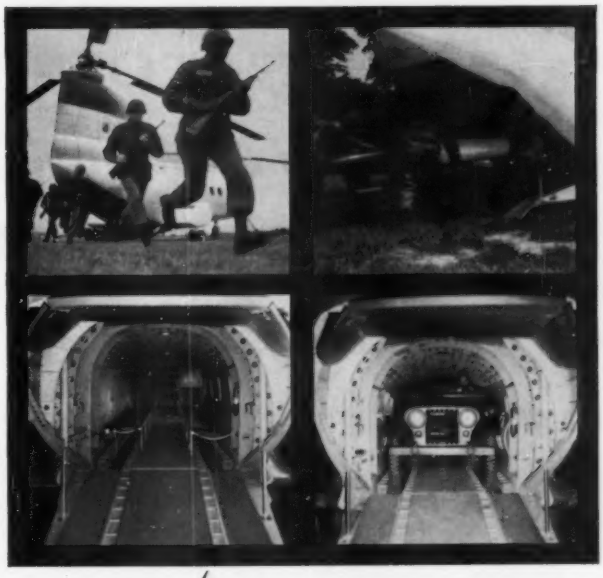

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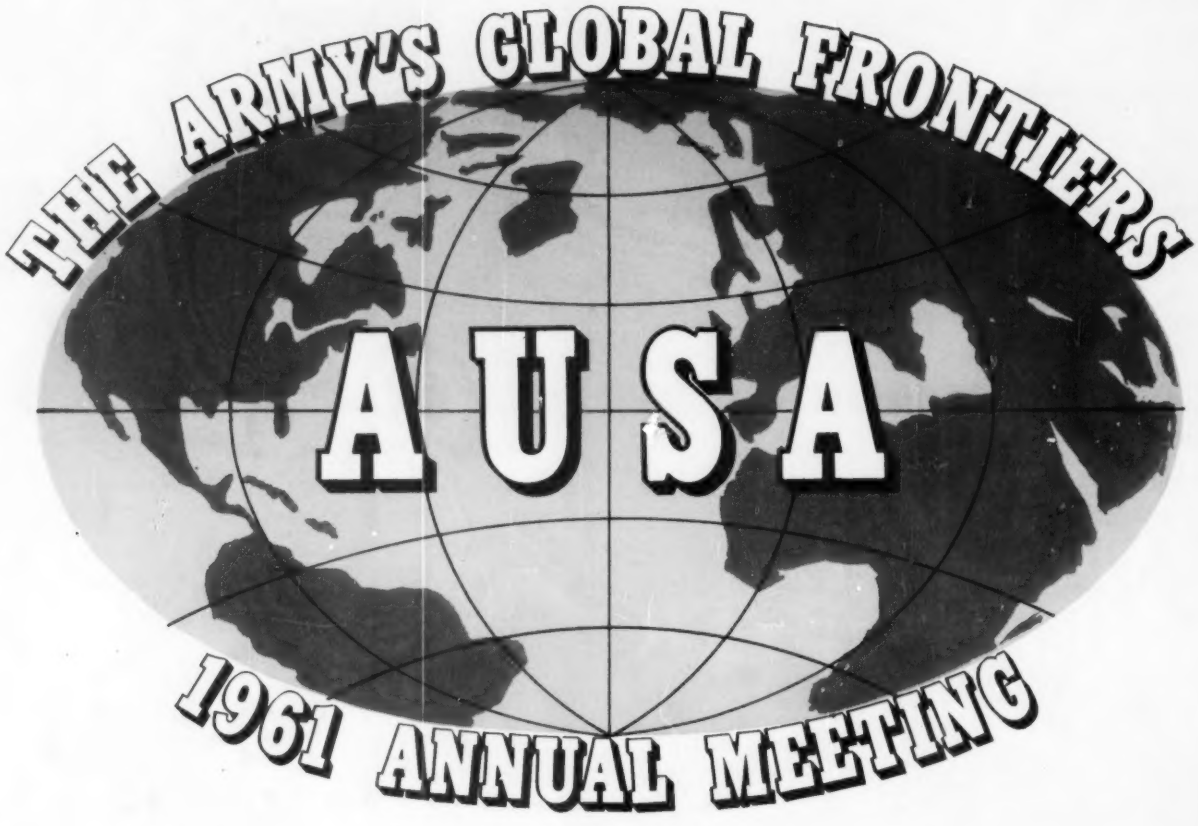

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ADVANCE REGISTRATION

AUSA Members may register in advance during the period 1 June through 1 September 1961. The coupon on the next page has been provided to assist you in registering in advance. Please complete, detach, and mail the form to AUSA promptly, since reservations are made on the basis of first come, first served. Advance registration and all ticket purchases for the social functions will be confirmed by mail. Registration badges and tickets ordered for the social functions will be available at the AUSA Advance Registration Desk any time after 8:00 a.m., Tuesday, 5 September.

Advance registration may be accomplished by completing and mailing the coupon to AUSA. Please show full mailing address (home or office), whether a civilian or military registrant, and the number of tickets wanted for each event. *Payment in full for registration and tickets to social functions must accompany the advance registration application.*

The deadline for acceptance of advance registration applications is 1 September 1961.

ATTENDANCE AT FUNCTIONS

The prices for registration and tickets required to attend the social functions are listed on the coupon below. Military personnel of the Armed Forces are eligible to register at the military rate of $2.00. Registered members may bring guests, including ladies, to the Luncheon on Thursday, 7 September, and to the General George Catlett Marshall Memorial Dinner on Friday, 8 September. The Reception on Wednesday is limited to registered members of AUSA only.

REFUNDS FOR CANCELLATIONS

We cannot make refunds for Reception or Annual Luncheon cancellations received after 31 August or for George C. Marshall Memorial Dinner cancellations received after 25 August.

Refunds for tickets requested but not available will be made after the Annual Meeting.

HOTEL RESERVATIONS

Hotel reservations must be made directly to the Sheraton-Park Hotel, Washington 8, D. C., or hotel of your choice. Military rates are available at the Sheraton-Park Hotel to persons in uniform and those who present active duty ID cards when checking in. AUSA cannot accept requests for hotel or military billet reservations.

MILITARY QUARTERS

Military personnel desiring accommodations at Army Posts may write to Headquarters, Military District of Washington, Att.: G-1, Washington 25, D. C., by 31 August.

1961 ANNUAL MEETING

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ARMY authors

MONTE BOURJAILY JR. *(page 23)*, for the past 10 years associate editor of *Army Times*, has watched the development of the Combat Arms Regimental System from the germ of an idea to its current position in the Army's organization structure. He has completed the manuscript of an outline history of the 175 regiments of CARS. During World War II he served in ETO as a wire communications specialist. Since then he has been press officer of the House of Representatives, edited and published a weekly newspaper, lectured on military personnel subjects, and contributed articles to military and general periodicals.

MAJ. GEN. HAMILTON H. HOWZE *(page 28)* has been contributing to ARMY and its predecessors since 1949. He is winding up a tour as Chief, U. S. Army Advisory Group, Korea, to become Assistant Commandant of the National War College. He contributed his father's "The Rescue of Lieutenant Gillmore" in the June issue.

COL. CHESTER E. GLASSEN, Artillery *(page 37)*, has been in the field of Army planning and budgeting for more than 12 years, after graduating from Syracuse University's Maxwell School for Public Affairs. He served for nearly five years as an Army budget planner and on the Secretary of the Army's Budget Advisory Committee. He developed many of the procedures now being used in budget planning. Colonel Glassen is Chief of the Programs Branch of the Programs and Analysis Group, in the Office of the Chief of Staff. MAJOR JAMES R. LOOME, Artillery, after a tour with the Air Defense Command, did graduate work at Syracuse University, earning his MBA degree (Army Comptrollership) in 1960. He is now serving in the Office of the Comptroller of the Army.

MAJOR KEITH L. MONROE, Military Police Corps *(page 45)*, has served in the Artillery and Infantry. Since 1948 he has commanded several MP units and been assigned to the staffs of Eighth Army and USAREUR. He is now with the Department of Career Development at the Provost Marshal General's School.

LT. COL. WILLIAM H. ZIERDT, JR., AUS, retired *(page 49)*, a 1933 graduate of Valley Forge Military Academy, was commissioned in the Infantry Reserve in 1936 and later served in the Pennsylvania National Guard. During World War II he was platoon leader and company commander of a tank destroyer company in Africa and Italy. Since 1953 and until his retirement a few months ago, Colonel Zierdt was editor of *Armor* Magazine and Secretary-Treasurer of the U. S. Armor Association.

H. PAUL WHITTEN *(page 53)* since 1954 has been a physicist at the Radiological Warfare Division of the Chemical Corps Field Requirements Agency at Fort McClellan, Alabama. He earned his BS degree at Mississippi College and his MS degree at the University of Illinois. Dr. Whitten has also been employed as a physicist with the Army Engineers Waterways Experiment Station at Jackson, Mississippi, the Celanese Corporation of America, and the Southern Research Institute.

COL. JOHN B. DEHOFF, Medical Corps, USAR *(page 64)*, a physician, was commissioned from the Infantry ROTC at Johns Hopkins University, and has also served in the Coast Artillery. During World War II he served at a station hospital in Trinidad and at an Evacuation hospital in ETO. He commands the 92d Field Hospital, USAR, in Baltimore.

CAPT. WARREN P. SCHILLING, Corps of Engineers *(page 64)*, as an enlisted man served in a rifle platoon of the 99th Infantry Division in ETO and received a battlefield commission. In Korea he commanded the 841st Engineer Aviation Battalion, and was integrated into the Regular Army in 1954. Captain Schilling is an instructor at The Engineer School, where he heads the ADM Section and travels with its demonstration team.

LT. COL. JOSEPH L. KNOWLTON, Artillery *(page 66)*, a 1941 graduate of USMA, served in ETO and in Korea. He is stationed in London with the U. S. Army Standardization Group, and as U. S. member of the Army Board, Military Agency for Standardization.

MAJOR THOMAS T. JONES, Corps of Engineers *(page 68)*, a frequent contributor, is on duty at the Military Academy. He wrote "Why Account for the Expendable" in our June issue.

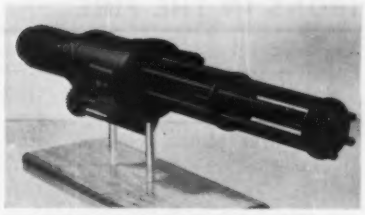
CAPT. ALVIN P. DOBSEVAGE, Infantry, USAR *(page 70)*, a member of the 1329th Infantry Division (Training) in New York City, served with the 10th Mountain Division during World War II. He has been a U. S. vice consul, has lectured in philosophy, and attended many Army schools. He teaches Latin at Wilton, Conn.

FRONT AND CENTER

(Continued from page 18)

gram. MSgt. Stuart A. Queen has retired after 20 years of service. He will join the public information staff of the American National Red Cross in Washington. ● UNDER SECRETARY OF DEFENSE Roswell L. Gilpatric thinks it might be well to combine and consolidate the troop information programs of the services. ● THE ARMY has refrained from getting into the debate over the characteristics of the tri-service tactical fighter aircraft proposed for development. It holds that it is up to the Air Force and Navy to produce an aircraft that will meet its requirements. ● THE PLAN to merge at least some of the functions of the intelligence operations of the services was held up until General Maxwell D. Taylor made his report to the President on national intelligence operations. ● THE PROPOSAL to merge STRAC and TAC was still under study by the Joint Chiefs of Staff early in June.

ARMY irons in the fire



Spittin' image of the larger Vulcan 20mm gun is this 7.62mm Minigun designed by GE for use on light aircraft and helicopters.

Under test by the Army, American Motors-built "Muskrat" is new ¾-ton capable of three mph on water, 60 mph on land.

Army to Buy French Missile

A successor to the SS-10 French antitank missile, called ENTAC, will be bought by the U. S. Army. ENTAC is small, light, and suitable for use by infantry. The missile is directed by an operator who maneuvers a stick to give the appropriate correction command transmitted through fine wires played out from ENTAC as it slams to the target.

Missile and launcher weigh 37 pounds; the missile in flight weighs 27 pounds. It carries a shaped-charge warhead designed for maximum effectiveness against armor and uses a solid propellant rocket motor.

The Army Ordnance Missile Command will act as the weapon system manager.

New Missile Test Facility

Captive firings of the Army's Nike Zeus antimissile missile is the first planned use of a new test facility to be constructed at expanding Redstone Arsenal, Ala.

Designed for captive firings of missiles with large thrust, the test stand will be constructed of reinforced concrete with approximately 2,600 cubic yards in the structure and 73 cubic yards in 10 cast-in-place piles.

Motors tested will be fired from a horizontal position and the structure has been designed to absorb the thrust of rocket motors of current and forecast magnitude with an adequate safety factor.

Barrel House Army

The Army is approaching the housing capability of the snail and the turtle—but at a much faster clip than either—with its "buildings in barrels" which uses liquid plastic and Fiberglas for forming shelters in remote areas.

Being researched by the Engineer R&D Labs at Fort Belvoir, the new concept makes use of liquid plastic at a density of approximately 60 pounds per cubic foot but which can expand into a density of two pounds per cubic foot, thereby obtaining 30 cubic feet of material for each cubic foot shipped. In liquid form the material costs only about 60 cents per pound.

The Engineers have already produced an experimental building from the material. It is 16 feet wide, 24 feet long and 9 feet high, and weighs 522 pounds, but the amount of plastic foam from which it was fabricated could be contained in one 55-gallon drum. Spraying with a Fiberglas skin gives protection against moisture and adds structural strength to the foam panels.

Engineers say that studies indicate the building has low thermal conductivity and negligible moisture absorption, and is easily erected. Additional advantages are light weight, strength and flexibility.

Micromodules Enter Second Phase

Micromodules, the tiny electronic circuits under development for small, lightweight, reliable communications and data processing

Warm or cool housing for remote areas seems feasible with development by Army Engineers of this "buildings in barrels" shelter which is blown up from barrels of plastic.

systems for battlefield use, has entered the second phase of development according to RCA.

The first phase required establishment of the feasibility of the concept, and this was done by testing thousands of modules with several hundred different circuits.

The second phase required that a production capability, already well advanced, be fully developed on an industry-wide basis. More than 50 manufacturers, including RCA, are participating in the program.

Expected to be the first practical answer to use of microminiature techniques in development of desktop computers, miniature two-way communications systems and outer space equipment, micromodules are tiny stacks of thin, ceramic squares having one or more electronic components mounted on them. The end product is a small, rugged, plug-in circuit measuring only one-third of an inch on a side.

Plastic Wheel

Reduction in weight of a typical U. S. Army tank by more than a ton may be possible if a plastic wheel under development by Firestone proves practical.

The wheel, a project of the Ordnance Tank-Automotive Command at Detroit, is expected to replace the conventional steel wheels on a tank, greatly reducing the unsprung weight of the vehicle and increasing its speed and mobility.

While a steel wheel weighs approximately 155 pounds, the new plastic wheel assembly, which includes wheel, a steel rim for dispersion of heat, and a solid rubber tire, will weigh only about half as much.

This 8-year-old isn't necessarily a spinach-eater nor is this an optical illusion. Lightweight plastic wheel, being developed by Firestone, may replace steel wheel as another means of reducing weight in Army's track-laying vehicles.

hot sparks

NAVY pigboat men going soft on rubber to help keep physically fit on long underwater cruises. Latest Goodyear gem is rubber gym to be used on nuclear subs. Inflated in passageway, gym allows sailors to do daily dozen without knocking against bulkhead projections. . . . **BUSHWHACKER** not a guerrilla soldier but Ford's latest *Stimulator* item. Tracked vehicle would be equipped with everything necessary to clear trails through dense woods while turning leveled trees into corduroy roads. Would cut trees very close to ground and mill stumps level with surface. Bushwhacker would have wide tracks, chain saws and other machinery to make short work of vegetation. . . . **CATERPILLAR coming** with lightweight five-cylinder diesel engine same size and weight as 220-hp truck engine but producing almost twice the power. Weight is 1950 pounds or slightly more than four pounds per hp. Company says four pilot models will be delivered to Army for test. . . . **ELECTRONIC decoder** by A. B. Dick capable of converting digitally coded "machine language" into reliable alphanumeric symbols at speeds up to 20,000 characters per second. Takes up only one cubic foot of space. . . . **GAMMA rays** being used to "see" through steel using image intensifier system by Rauland Corporation to detect flaws in four-inch-thick steel and other dense objects. Permits assembly line type continuous inspection of such materials. . . . **"LIGHT-BEAM" radar** for many scientific explorations, including mapping the moon more accurately than before, developed by Hughes Aircraft. In the future an optical radar operated on Earth could spotlight beam on moon area only 10 miles in diameter with this principle. Development is research companion to new "Colidar" spacecraft radar. . . . **MORE new M14 rifles** on the way for the Army. Harrington & Richardson has contract for 133,000 additional at cost of $6.8 million. . . . **BIG ORDER for new type tear gas** to Federal Laboratories, subsidiary of Breese Corp. with Army Chemical Corps one of contractors. . . . **FORWARD-LOOKING Eastman Kodak** preparing new type of star atlas for space navigation which will chart infrared radiation of known stars. ARGMA is contractor. . . . **CQs please copy:** Wireless intercom announced by Precision Equipment Company. . . . **CONTROLLABLE thrust** solid propellant rocket motor successfully tested by Amcel Propulsion. Promises to extend application of solid propellants into missile and space missions previously reserved for liquid and hybrid type power plants. Specific applications are drag equalization for maintaining planned flight profiles, boost-sustain propulsion, evasive maneuvering, velocity reduction for soft lunar-type landings and re-entry, velocity control for space rendezvous, orbit control and orbit deviation. . . . **IMAGE-ORTHICON camera tube** by GE has near infrared spectral response and can be used to penetrate hazy atmospheres for mapping and surveillance as well as passive detection systems. . . . **PRACTICAL DEVICE for printing** instant, durable captions on negative film developed by ITT Federal Labs. Adaptable for use on roll film up to 9.5 inches wide, titler would be useful in aerial recon and map studies.

In all of the excitement over the accomplishment of Astronaut Shepard and NASA few noted that the power plant on the flight was the reliable **REDSTONE—Army developed,** as was the first U. S. satellite, Explorer I, and the first U. S. solar satellite, Pioneer IV. . . . **RICHARD S. MORSE,** assistant Secretary of the Army for Research and Development, has resigned; he's now back on the Army Scientific Advisory Panel. . . . **Heard of UPSTART?** It's a high-altitude target missile developed by Aeronca for the Army and has been fired at White Sands Missile Range.

ARMY books

NATIONAL SECURITY POLICY

A FORWARD STRATEGY FOR AMERICA. Robert Strausz-Hupé and others. Harper & Brothers. 451 Pages; Index; $5.95.

Reviewed by

COL. JAMES D. ATKINSON, President of the American Military Institute and author of the recent *The Edge of War.*

Today there is an outpouring of books about every aspect of our national security. This is as it should be. Never before have Americans been confronted with the immensity of the challenge facing them. By whatever name the communist confrontation is called—cold war, "the struggle for peace," polyreconic warfare—it is not merely a challenge to a system of government, nor even to physical survival alone, as have been many challenges in the crises of the American past. Instead it is a mortal threat to the survival of the United States as it exists in our hopes, our beliefs, our aspirations, and above all to the continuance of a national ethos dedicated to the preservation and the enlargement of human liberty.

This is not a comforting book. Rather, it is a fire alarm in the night which seeks to awaken Americans to a world that, often brutal and decidedly weak on "togetherness," is none the less starkly real. Its probing of the real world in which we must live—unlike the gentlemen's club world in which some imagine themselves to live—is as sharp as the surgeon's scalpel. It is a hard book, since national strategy is concerned with hard choices. But as the authors make abundantly clear, it is fatal to play at the game of national strategy as though one were perpetually Pollyanna.

Foreign policy requires the assertion of authority, the calculation of power, the will to face up to threats of nuclear-missile blackmail, the support of allies and, always, the acceptance of risks. Military policy requires many of these same things. Additionally it requires a firm basis of military strength in being. Too often we forget Washington's counsel: "If we desire to secure peace . . . it must be known that we are at all times ready for war." Among the many virtues of *A Forward Strategy for America* is its development throughout of the fact that foreign policy is simply one side of the coin; the other side is military policy. Together they constitute national security policy.

But will our people, and especially our opinion leaders, take cognizance of—and accept—the hard choices entailed in a national strategy for survival? As the authors so cogently state: "In history, political systems usually were destroyed by their foes after their own leadership groups had committed intellectual suicide. Can a prosperous, easygoing people be aroused in their own defense?"

This challenging and comprehensive study of an American strategy for survival aims to present the world as it is, not as we would wish it to be, and to offer significant guide lines for American conduct in that world. The evidence from the U. S. past shows that we will accept any sacrifice if we are convinced of the need and if we are offered vigorous leadership by men in whose character and wisdom we can reasonably trust. Clio, Muse of History, asks us: Is the evidence of the American past meaningful for the present and the future?

BRITISH GENERALS IN AFRICA

THE DESERT GENERALS. Correlli Barnett. The Viking Press. 320 Pages; Illustrated; Maps; Index; $6.00.

Reviewed by

LT. COL. H. A. DEWEERD, author of books on leaders of both World Wars.

This extraordinarily fine piece of military research and writing assesses the British commanders who fought in North Africa during 1940-42: O'Connor, Cunningham, Ritchie, Auchinleck, and Montgomery. There are also observations about subordinate commanders and an appreciation of the role of the brilliant but ill-starred staff officer, Major General E. Dorman-Smith, whose postwar libel suit forced Churchill to qualify his criticism of Eighth Army leadership under Auchinleck.

Barnett believes General R. N. O'Connor was the best of the British generals in North Africa. Bold, unorthodox, aggressive, he defeated the Italian army which tried to invade Egypt in 1940, destroying 10 divisions, capturing 130,000 prisoners, 400 tanks, and a thousand guns at the cost of 476 British killed and a thousand wounded. Unlike Montgomery, who loved publicity and who never moved until he was overinsured, O'Connor detested publicity and fought on a shoestring.

But unfortunately for O'Connor and for British fortunes in North Africa, Churchill broke up his winning team of units and men in the Western Desert in order to send forces into Greece. Rommel appeared in North Africa and one of his probing columns captured General O'Connor on 3 April 1941. He spent most of the remainder of the war as a prisoner in Italy the "forgotten victor" among British generals.

Auchinleck's choice for a successor to O'Connor fell upon Alan Cunningham, conqueror of Ethiopia. His short period of command of Eighth Army was marked by disaster. Accustomed to poverty and improvisation in East Africa, Cunningham was unprepared for large-scale armored war in the desert. He was not well when he took over Eighth Army but concealed this fact by sheer will power. Unable to follow or control the fluctuating course of the battle of Sidi Rezegh in November 1941, Cunningham imagined himself at the eve of a great victory when in fact he was being decisively defeated.

Against the thrusting, inventive professionals of the Afrika Korps, Cunningham and his successor, Neil Ritchie, had little chance of suc-

cess. They did not know how to combine the use of tanks, artillery and infantry. Though their own tanks were being smashed by the German 88mm dual-purpose gun, no use was made of the splendid 3.7-inch British AA gun which could outdo the 88 in an AT role and which was in Africa in greater numbers than the 88. The "book" said that the two-pounder was to be used for AT work, and that was that.

Auchinleck, who hestitated about relieving Ritchie, saved the day for Britain in the Middle East by directing a successful retirement to a defensive position at El Alamein. He also prepared the way for Rommel's ultimate defeat, though he got no credit for this.

Montgomery does not come out very well in these pages. His appreciation of Eighth Army's situation when he took over is shown to be faulty. Though he had declared himself to be against splitting up units, he soon reverted to the practice. Though Montgomery claimed to have fought El Alamein according to a fixed plan, this was not actually so. After Eighth Army won a costly and prolonged battle against a greatly outnumbered Afrika Korps and a sick Rommel, Montgomery was too cautious and slow to reap the full rewards of their fighting. He committed the same mistakes that he criticized Eisenhower for making in 1944-45 in northwestern Europe, advancing on a broad front instead of concentrating all his resources on the fastest possible single advance in order to cut off Rommel.

Barnet's book is certain to provoke admiration and controversy. It should be widely read.

AXIS FORCES IN AFRICA

THE FOXES OF THE DESERT. Paul Carell. E. P. Dutton & Company. 370 Pages; Illustrated; Maps; Index; $5.95.

Reviewed by

MAJ. GEN. H. W. BLAKELEY, who has reviewed other works on World War II.

The author of this book, which is translated from the German, says his purpose is to give a "true and accurate account of the North Africa Campaign," and that he was assisted by more than a thousand veterans. The result is sometimes good, but the little battle sketches, embellished with unconvincing conversations, have little historical or military value.

What is more unfortunate is that Carell does little to clarify the command structure. Three well-established myths about Field Marshal Rommel could stand not only clarification but destruction: Rommel commanded the Afrika Korps during the North Africa campaign; the Afrika Korps was the Axis force there; Rommel was supreme commander.

Apparently, Rommel commanded the Afrika Korps for less than six months of the two years he was in Africa, and also had the title of commander of German troops in Libya during the same period. After that he was an army (the title varied somewhat) or army group commander. Afrika Korps commanders during this period were not Rommel, but Cruwell, Nehring, Bayerlein, Thoma, and Cramer. In an appendix to Brigadier Young's *Rommel: The Desert Fox,* a presumably official transcript of Rommel's service record does not even mention the Afrika Korps. That was an effective unit, but it was a corps, sometimes heavily reinforced it is true, in what was eventually a group of armies. Of course Rommel was the effective high commander in the desert, but nominally he was under Italian command most or perhaps all of the time.

Not only is the command structure inadequately handled, but the author's meaning often is doubtful in other matters. Here translation may be faulty. What, for example, is "a flak battery of the corps operational staff?" Sometimes it is hard to accept the author's statements. In describing the British commando attempt to capture Rommel, he says that a captain was "Acting Quartermaster General" and that a major was "second-in-command" of the "headquarters of the Quartermaster General of Panzer Gruppe Afrika." This installation was not Rommel's headquarters, as the British thought, but neither was it "the nerve centre of the Panzer Gruppe," as the author believes.

Sometimes the German viewpoint is interesting. In describing the poor rations furnished the Italian troops, he contrasts them with the food of the American soldiers who "even in the most advanced positions were served with a splendid menu."

WARTIME EXPANSION OF CWS

UNITED STATES ARMY IN WORLD WAR II. The Chemical Warfare Service: From Laboratory to Field. Leo P. Brophy, Windham D. Miles, and Rexmond C. Cochrane. Office of Chief of Military History. 498 Pages; Illustrated; Index; $3.50.

Reviewed by

COL. WILLIAM H. GREENE, who commands the Chemical Corps Training Command.

This volume of the Army's history should be required reading for all who are concerned with logistics in peace or war. The problems which the Chemical Warfare Service encountered were those of all the services, but on a smaller and, therefore, more comprehensible scale.

The report goes back to World War I, and indicates how the difficulties encountered then foreshadowed some of those of the second conflict. Underlying the introductory chapters and, indeed, the whole book, is the theme of the earlier volume, *Organizing for War*: the drastically curtailed military establishment, and the official political and military aversion to chemical warfare that seriously hampered planning and preparation of an adequate scope. Not only were logistical funds inadequate, but so were those for research and development.

Here was a service whose appropriations for 1940 were $2 million and for 1941 $60 million. Its principal peacetime product was the gas mask and it had prepared the necessary industrial mobilization studies for that article. By the time the war came, it had developed the 4.2-inch mortar whose war record became outstanding, the incendiary bomb that comprised a major portion of the Air Corps' payload, and the portable smoke generator whose tactical use was important in screening river crossings and lines of communication. Procurement of these weapons in quantity, as well as the procurement of many bulk chemicals, required drastic expansion and reorganization.

When so much of the mobilization planning went by the board,

the Service was compelled to turn to smaller manufacturers who had not participated in the prior planning. These firms did not have extensive research or engineering departments, and needed substantial assistance in production engineering, obtaining critical raw materials and components, safety guidance, packing and packaging, and inspection. Ninety-five per cent of all CWS products were non-commercial.

To a country just emerging from a major depression, it made good sense to insist on spreading procurement contracts to as many small firms as possible. This generated a policy of procurement of components—articles which presumably could be easily fabricated even by small manufacturers. Unfortunately, it was very difficult to insure uniformity of parts, and the assembly of components was seriously hampered. Eventually this policy was changed and subsequent contracts were written for finished products, with the major contractors responsible for insuring the compliance of their subcontractors with the specifications.

The story ends, ironically, on much the same note as it begins: Army Service Forces headquarters, in its plan for demobilization, included a proposed reorganization of the technical services which would have abolished the Chemical Warfare Service.

THE GREELY EXPEDITION

ABANDONED: The Story of the Greely Expedition, 1881-1884. A. L. Todd. McGraw-Hill Book Company. 323 Pages; Illustrated; Maps; Index; $5.95.

Reviewed by

COL. R. ERNEST DUPUY, retired, a distinguished Army historian.

There were 26 when they first bivouacked in the Arctic waste of Grinnell Land—three officers and 20 enlisted men of the U. S. Army, a civilian physician, and two Eskimo hunters. Three years later there were seven starved human wrecks, one of whom expired at the moment of rescue.

That's the statistical tally of the Lady Franklin Bay Expedition, the official effort of the United States for the International Polar Year of 1882-83, confided to the Army Signal Corps.

Emotionally, the story of the Expedition is something else. It is the saga of two strong men—an officer and his loyal first sergeant, stout Regulars both—who accomplished the impossible. This is what the author has successfully put between covers.

Three quarters of a century have passed since the Greely story first rocked the world, its epic of the devotion to duty of Lieutenant Adolphus Washington Greely, Signal Corps, and First Sergeant David Legge Brainard, fogged in the mirror of public opinion by hot-breathed whispers of cannibalism among the survivors.

Mr. Todd's painstaking research and documentation at long last sets this grisly innuendo in true perspective. As Vilhjalmur Stefansson, the great Arctic explorer, remarks in his introduction: "A. L. Todd . . . has increased both the stature and the verisimilitude of Greely and of his men. Through telling more truth, more precisely, than previous Greely narratives, *Abandoned* contributes to the pride we feel in men who under the supreme test rose to moral heights. We think the better of humanity for these revelations."

Greely's well-planned expedition accomplished much during its first winter on the ice, reaching farther north—83 degrees 24 minutes—than ever human foot had previously trod. A mass of scientific data was collected, which would serve as foundation for all later exploration. Then the first supply ship sent to it in the summer of 1882 was forced to turn back, and the little detachment tightened their belts.

In 1883 a second relief ship was crushed in the ice. Greely, displaying consummate leadership, led his men back south to a frigid encampment at Cape Sabine. Supplies petered out and starvation set in. Meanwhile, in Washington, in shocking callousness, President Arthur and his Secretary of War, Robert Todd Lincoln, wrote the expedition off.

Not until Greely's devoted wife and a few friends aroused public opinion was anything more done towards rescuing an official governmental expedition. Even then, Congressional squabbles hindered rescue. Both the President and some of the solons appeared to be determined to jerk the national purse strings tight. Men were expendable; money to save their lives was not.

While this was going on, Greely, loyally supported by Brainard, fought both Nature and the deteriorating texture of some of the men, under the most harrowing conditions.

At long last Congress authorized a third relief expedition, to be handled by the U. S. Navy. Abroad, Queen Victoria donated a British ship. Commander Winfield Scott Schley took a three-ship squadron north to effect rescue—literally at the last minute, on 22 June 1884—in a fashion reflecting great credit on the sister service.

The Greely Expedition was one of the Army's greatest peacetime exploits. Mr. Todd has done us all a service in setting its record straight. A fine collection of photographs adds to the book's interest.

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Illustrated with photographs; bibliography; index; $4.95 at all booksellers. DOUBLEDAY & CO., Inc.
Garden City, N.Y.

CIVIL WAR'S PSYWAR

THE IMAGE OF WAR. W. Fletcher Thompson, Jr. Thomas Yoseloff, Inc. 248 Pages; Illustrated; Index; $7.50.

Reviewed by

LT. COL. ROBERT N. WALKER, civilian consultant to the Department of the Army and Adjunct Professor at The American University.

The Image of War recounts the valuable work of the newspaper and magazine artists who covered the Federal armies. The contribution of photographers is also treated, although admirers of Mathew Brady may wish a more extensive coverage.

The hundreds of sketches by field artists not only significantly raised

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THE ASSOCIATION OF THE U. S. ARMY shall be an organization wherein all who are in accord with its objectives may join in the exchange of ideas and information on military matters, and in fostering, supporting, and advocating the legitimate and proper role of the Army of the United States and of all its branches and components in providing for and assuring the Nation's military security.

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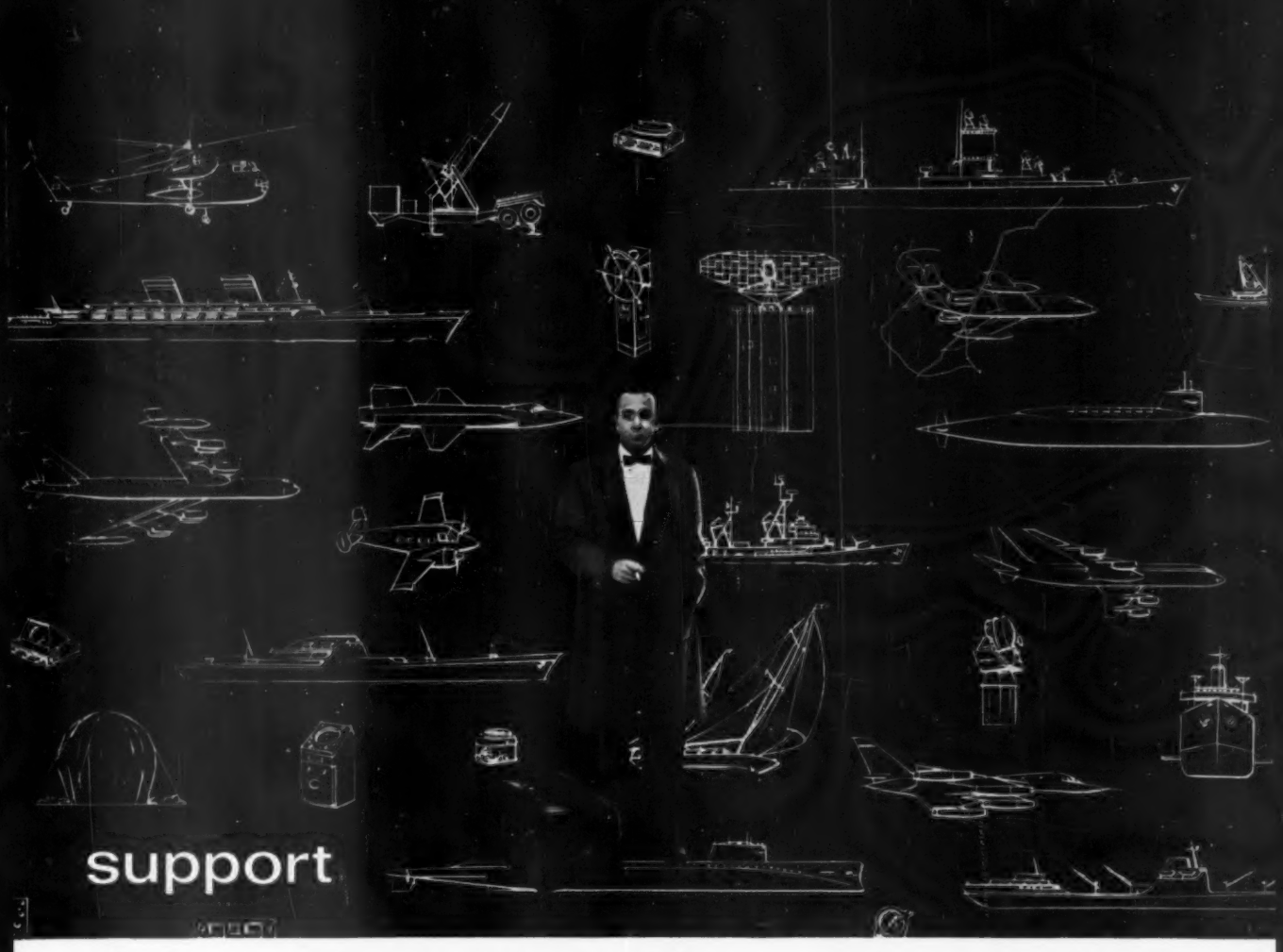
morale in the North, but also provided a valuable addition to the historical record. Their task was not easy. Besides the inconveniences and hazards of life in the field, they had to contend with governmental and editorial censorship, and with poor communications facilities. Above all, they had to create a new and realistic image of war for a people who had been nurtured on the romantic glow created by artists who, far from the battlefield and usually long after the event, drew pictures that met popular approval of a young, robust, and growing nation, proud of its heritage of national military heroes.

Field artists for the most part tried to sketch honestly, but touch-up artists and engravers in home offices, many of whom prepared the "horror" sketches from their fertile imaginations, frequently altered drawings to carry a propaganda theme. The primary target was the people on the home front. In fact, Dr. Thompson concludes that the new field images never completely triumphed over the editorial artists' sketches.

It is regrettable that more is not said of coverage in the Trans-Mississippi, especially Banks' Red River campaign, the largest mounted west of the Mississippi.

Although there was no centralized coordination of news releases, the Northern public was enlightened by the picturemen and the issues of the war were interpreted by editorial artists. Apparently the cumulative impact of these graphics on the course of the war has never been evaluated. That the South suffered a serious deprivation in the dearth of illustrated news media is clear, knowing what we do today of propaganda's potential as a sharp and vital weapon. The few Confederate artists who sketched the war had little or no influence on the contemporary war image in the South. This lack of psywar support may have hurt the Confederacy more than historians have realized.

Civil War buffs already are familiar with many of the sketches and photographs which accompany the narrative, but less informed readers will thrill to these graphics by which "you are there." The book is well worth reading, and fills a long-felt need in the historiography of the period.



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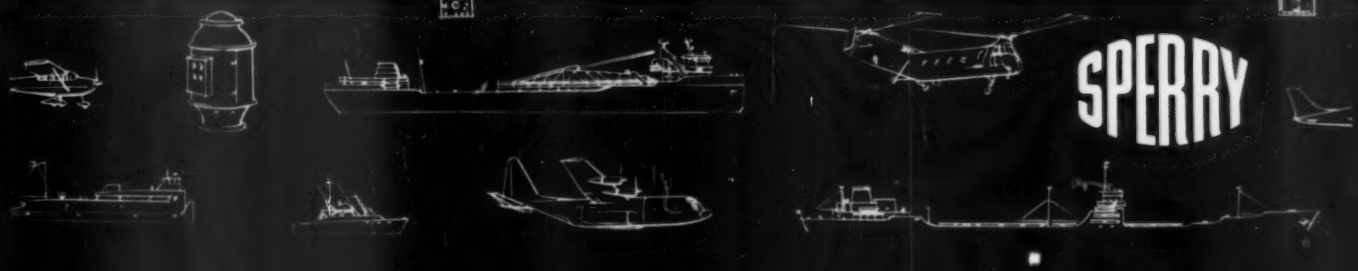

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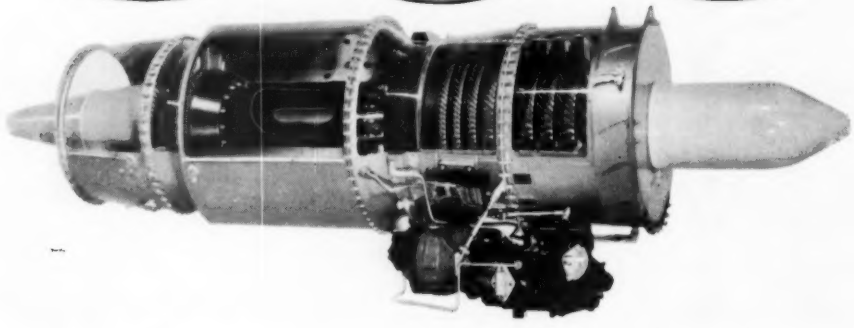

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